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ABSTRACT

The Iowa Norming Study determined how well graduating high school seniors (N=722) performed on the revised 1988 Tests of General Educational Development (GED), providing the data to describe and evaluate the score requirements for GED Test candidates in terms of the percentage of Iowa high school graduates a GED Test candidate must exceed to obtain the Iowa High School Equivalency Diploma. A second purpose was to evaluate and potentially revise the Iowa minimum score requirements for the Iowa High School Equivalency Diploma. The related Iowa GED Candidate Impact Study determined the impact of different levels for minimum score requirements on the passing rate for GED Test graduates and candidates as a whole and the impact of different passing scores on subgroups of candidates. The studies clearly indicated higher pass rates for GED candidates, considered a direct result of the instructional program offered through Iowa's community colleges, than for high school seniors. The current minimal standard of 35 and 45 could be raised to 40 and 45 without having a significant negative impact on the candidate population. Such a standard would satisfy the 70-72% pass rate criteria of the norm group of seniors. Thirteen tables and six figures give the data for high school seniors and GED Test candidates. (SLD)

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Final Report: Iowa's Norming Study of the Tests of General Educational Development

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FINAL REPORT: IOWA'S NORMING STUDY

OF THE

TESTS OF GENERAL EDUCATIONAL DEVELOPMENT

State of Iowa
DEPARTMENT OF EDUCATION
Division of Community Colleges
Grimes State Office Building
Des Moines, Iowa 50319-0146

October 1, 1989

State of Iowa
DEPARTMENT OF EDUCATION
Grimes State Office Building
Des Moines, Iowa 50319-0146

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EXECUTIVE SUMMARY OF THE IOWA GED NORMING STUDY

Purpose of the Iowa Norming Study

The primary purpose of the Iowa Norming Study was to determine how well Iowa's graduating seniors performed on the revised 1988 GED Tests. Specifically, the study provided the data necessary to describe and evaluate various score requirements in terms of the percentage of Iowa high school graduates that an Iowa GED candidate must exceed in order to obtain the Iowa High School Equivalency Diploma. With such information, judgments about the stringency of Iowa's GED score requirements can be made in light of the performance of Iowa's graduating seniors. As stated by the Commission on Educational Credit and Credentials, judgments relating to the choice of score requirements should be well-reasoned such that: (1) requirements are neither so high as to represent levels of achievement far above that demonstrated by recent high school graduates or, (2) so low as to threaten the credibility of the GED credential.

A second purpose of the Iowa Norming Study was to evaluate and potentially revise Iowa's minimum score requirements for issuance of the Iowa High School Equivalency Diploma, based on judgments that arise from looking at the Iowa graduating senior performance level. Another factor was evaluating the potential impact on GED graduate pass rates (both overall and by racial/ethnic subgroups) in relation to alternative score requirements.

Iowa GED Graduate Impact Study

A related study to the Iowa GED Norming Study was the Iowa GED Candidate Impact Study. The study had two major outcomes:

1. Determine the impact of the establishment of different levels for minimum score requirements on the pass/fail rate of the Iowa GED Graduates and Candidates as a total population, [i.e. what percent of the GED graduates and candidates would meet a different minimal score requirement(s) other than the current requirement of 35 and 45 for issuance of the Iowa High School Equivalency Diploma.]

2. Determine the impact of the establishment of different levels for minimum score requirements on the pass/fail rate of specific subgroups of minority populations within the total Iowa GED Graduate population.

Results

1. The Iowa Seniors scored highest in Writing Skills and Mathematics with average standard scores of 51.0 and 51.9.

2. The Iowa GED Graduates scored highest in Social Studies and Literature with average standard scores of 53.5 and 54.1.

3. The National GED Graduates and Iowa GED Graduates tied in Science with an average standard score of 53.9.

4. The National GED Graduates scored highest on the overall test average with an average standard score of 51.6. However there was only .1 of a point difference between the National GED Graduates and Iowa GED Graduates who had an overall standard score of 51.5.

5. The Iowa High School Seniors scored lowest in Literature (49.5) as compared to the Iowa GED Graduates who scored highest in Literature (54.1).

6. The Iowa GED candidates have a pass rate of 88 percent at the current Iowa requirement of 35 and 45 as compared to a 76 percent pass rate for the Iowa High School Seniors.

7. The Iowa GED candidates have a pass rate of 80 percent at a 40 and 45 minimum score requirement as compared to a 72 percent pass rate for the Iowa High School Seniors.

8. The pass rate for all four groups drops dramatically (a range of 17-20 percentage points) from the 40 and 45 requirement to the 45 minimum requirement.

9. The Iowa GED Graduates have the highest pass rate, at any given score requirement, in comparison to the four other groups.

10. The differing pass rate requirement for majority/minority Iowa GED Graduates at different score requirement levels is inconsequential up to the 40 and 45 requirement level.

Conclusions

1. The **Iowa GED Graduate impact group** provides an adequate representation of the Iowa general GED population and the minority distribution in Iowa's GED population.

2. The **Iowa High School Senior norm group** is representative of the Iowa high school senior population with respect to: (1) minority distribution of Iowa's secondary school population, (2) achievement on the Iowa Tests of Educational Development.

3. The projected pass rates for the majority **Iowa GED Graduates** and the **minority Iowa GED Graduates** reflect the same magnitude of change for all requirement levels up to 40 and 45. Any proposed change in the Iowa minimum standard would reflect approximately the same pass rate at different requirement levels for both the majority/minority populations up to 40 and 45.

4. The **National GED Graduates and Iowa GED Graduates** possess educational skills which are at least as strong as those of graduating high school seniors in the areas measured by the: (1) Social Studies Test, (2) Science Test, and (3) Interpreting Literature and the Arts Test. The strong performance of both **National and Iowa GED Graduates** on these three tests suggests that examinees' skills in reading comprehension, analytical reasoning, and general problem solving -- skills which may be more easily acquired through life experience than skills in writing and mathematics -- will serve them well on the GED Tests.

   Although the writing and mathematics skills of the **National and Iowa GED Graduates** are strong enough to pass the test at Iowa's current minimum standard score requirement of 35 and 45, they are lower than the level of skills demonstrated by **National and Iowa Graduating High School Seniors** in these areas.

5. The Iowa standard for issuance of the Iowa High School Equivalency Diploma could be raised from the current standard of 35 and 45 to 40 and 45 without having a significant negative impact on the Iowa GED candidate population.

Summary

The results of the norming study clearly indicate that: (1) The Iowa GED Candidates have a high pass rate on the GED Tests. [e.g. 88 percent at the 35 and 45 requirement.] This high pass rate is a direct result of the ABE/GED instructional program offered through Iowa's 15 area community colleges. The referral rate from ABE/GED instructional classes to the testing centers averages between 85-90 percent for any given year, (2) the current minimal standard of 35 and 45 could be raised to 40 and 45 without having a significant negative impact on the GED candidate population, (3) a minimum standard of 40 and 45 would satisfy the 70-72 percent pass rate criteria of the Iowa High School Senior norm group, (4) the Iowa GED Graduates scored below the National High School Senior norm group and Iowa High School Senior norm group in the areas of Writing Skills and Mathematics.

ACKNOWLEDGEMENTS

The statewide Iowa GED Norming Study was completed through the cooperation, guidance, interest and assistance of many individuals who devoted their time, energy, and expertise in all phases of the project. The writer expresses appreciation to the individuals and groups who participated and assisted in making the study a successful reality.

Appreciation is extended to the staff of the General Educational Development Testing Service of the American Council on Education. Dr. **Douglas R. Whitney**, Director of GED Testing Services, provided overall guidance and consulting services. **Mr. Wayne Patience**, Associate Director of GED Testing Service, served as senior research consultant and provided valuable technical assistance through all phases of the project. He was always available for consultation, especially for the many impromptu telephone calls regarding various phases of the study.

A special and sincere thank you is extended to Dr. **Robert Forsyth**, Director of Iowa Tests of Educational Development Testing Program (ITED), University of Iowa, for the time and expertise expended towards the norming study. Bob was particularly instrumental in developing the research design and data analysis of both the norm group and GED candidate performance data.

Special recognition is paid to the following groups for their participation in the project: **(1) parent center chief and alternate GED examiners, (2) cooperating school districts, (3) local counselors and principals who assisted the chief examiners with testing logistics in the local school districts, (4) the high school seniors who served as the norm group within each participating district.**

A special note of gratitude is expressed to Mr. **William H. Bean**, Assistant Bureau Chief, Bureau of Administration and Accreditation, Iowa Department of Education. Bill assisted in assuring that Iowa's minority populations were adequately represented in the sampling of the high school senior population which constituted the norm group.

Appreciation is extended to Mr. **James Gould**, Statistical Consultant, Department of Education, for assisting in providing computer analysis of characteristics of the Iowa Secondary School Population.

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The Iowa Norming Study Final Report was written and edited through the collective efforts of: (1) **Douglas R. Whitney**, (2) **Robert Forsyth**, (3) **Wayne Patience**, and (4) John Hartwig.

John Hartwig, Ph.D.
Division of Community Colleges
Iowa Department of Education
October, 1989

FOREWORD

The Iowa GED Norming Study was conducted in order to continue the quality of excellence and purpose in Iowa's GED Testing program. Iowa's educational system has established a national reputation for its excellence and quality. In this spirit, the Iowa Norming Study will provide yet another measure of the quality and excellence of Iowa's postsecondary educational system.

For adults who did not complete high school, the Tests of General Educational Development (GED Tests) provide an opportunity to earn a high school credential. The GED program, sponsored by the American Council on Education, enables individuals to demonstrate that they have acquired a level of learning comparable to that of high school graduates. Recognized nationwide by employers and institutions of higher learning, the GED program has increased employment, education, and earning opportunities for more than ten million adults since 1942. Each participating state, province, and territory administers the GED Tests and issues a credential based on its own minimum score requirement. The GED testing program thus enables more than 450,000 adults every year to obtain high shool equivalency certificates -- about 15 percent of all high school diplomas issued in the United States. The GED testing program continues to offer a substantial number of people the opportunity to qualify for a high school equivalency credential. Since 1971, the program has enabled over seven million adults to obtain formal recognition of their educational development through their attainment of a high school equivalency credential.

The state of Iowa has participated in the GED Testing Program since its inception in 1942. The equivalency credential has been issued by the state since 1966. During the time frame from 1966 through September, 1989, the state GED testing program has provided a "second chance opportunity" for over 145,000 Iowa citizens who completed the GED Tests. The state of Iowa has issued over 100,000 equivalency certificates during the same time frame -- approximately 12-15 percent of all secondary credentials issued in Iowa. Thus, the GED Testing program has positively impacted the economic development emphasis in the state by allowing the adult citizens of Iowa to become positive, contributing members in the work force and within the context of the larger society.

The GED Testing Program's major purpose at the local, state and national level, is to provide a second chance opportunity for those adults who did not have, or could not take advantage of, a "first chance opportunity" to complete a traditional program of studies at the secondary school level. The successful completion of a second chance opportunity leads to the issuance of the Iowa High School Equivalency Diploma. The major issue that emerges is: the standard of excellence that must be attained to receive the Iowa High School Equivalency Diploma. The norming study and GED candidate study have supplied the data relative to the performance levels of both the Iowa High School Senior Norm Group and the Iowa GED candidates in relation to their national counterparts.

The true challenge for Iowa educators, is to translate the results of these studies into a meaningful, realistic and fair standard which reflects Iowa's educational excellence.

IOWA GED NORMING
STUDY FINAL REPORT

OVERVIEW

This evaluation report presents the structure, format, processes, results, and conclusions of Iowa's Tests of General Educational Development (GED) Norming Study. **The major purpose of the study was to provide a basis for evaluating and setting minimum score requirements for issuance of the Iowa High School Equivalency Diploma.** This project also assisted in providing actual performance data on the Iowa High School Senior norm group and the Iowa GED Graduate population on the 1988 revisions of the GED examinations.

The Iowa GED Norming Study represented a cooperative relationship among the following constituencies: (1) General Educational Development Testing Service (GEDTS), (2) Iowa's Merged Area School GED Chief and Alternate Examiners, (3) the University of Iowa's Iowa Test of Educational Development Testing Program (ITED), (4) participating school districts providing data on Iowa's High School Senior performance, and (5) Iowa Department of Education. The data analysis of the high school senior norm group, and Iowa GED candidate's performance levels was conducted by Dr. Robert Forsyth, Director of the ITED program, University of Iowa.

Definition of Terms

The following terms are used throughout the report.

1. **Average** - a number in the range of possible scores, though not always an actual score attained by an individual, which represents the most typical or representative value in a group of scores. "Average" is a generic term designating any measure of central tendency, such as the mean, median, or mode. On the GED Tests, the average standard score for graduating high school seniors is 50.

2. **Frequency Distribution** - consists of a sequence of score intervals opposite each of which is recorded the number of scores in the total group falling in that interval. The terms "frequency distribution" and "distribution of scores" are nearly synonymous.

3. **Iowa GED Candidates** - Iowa GED examinees who completed all five GED Tests.

4. **Iowa GED Graduates** - Iowa residents who completed and passed, by Iowa State Standards, the GED Tests and received the Iowa High School Equivalency Diploma between June 1, 1988 and June 1, 1989. (Iowa State Standards means a minimum standard score of 35 on each test and an average standard score of not less than 45). This group constituted a representative sample of Iowa's GED Graduate population.

5. **Iowa Graduating High School Seniors** - a representative sample of Iowa's 1989 graduating seniors who completed the GED tests. This group constituted the norming group representative of the Iowa Graduating High School Senior population.

6. **National GED Candidates** - those examinees who completed all five tests, and for whom test results were received by GEDTS between January 1, 1988 through February, 1989.

7. **National GED Graduates** - the national GED candidates who took all five tests and achieved a standard score of not less than 40 on any given test.

8. **National Graduating High School Seniors** - a representative sample of the nation's 1987 graduating seniors who participated in the national standardization study in the spring of 1987. This group constituted the norming group representative of the National Graduating High School Senior population.

9. **Mean** - a measure of the central tendency of the average numerical value of a set of scores. It is calculated by adding all of the scores and dividing the sum by the number of scores.

10. **Norm** - as the term is used in relation to test scores, is the average or typical test score (or other measure) for members of a specific group. Norms are often presented in tables giving the typical score values for a series of different homogeneous groups such as students in a given grade or students of a given age. English editions of the GED Tests are normed using a representative sample of graduating seniors in high schools throughout the United States.

11. **Normal Distribution** - a mathematically defined frequency distribution. It is represented by a symmetrical, bell-shaped curve characterized by scores concentrated near the middle and tapering toward each extreme. Tables have been prepared to show the height of the ordinate (verticle axis) at various points along the base line (score scale) and for showing areas under the curve in various intervals along the base line. The heights of the ordinates indicate the relative frequencies of each score in the distribution. The areas under the curve over various scores fall in that interval. The GED standard scores for graduating high school seniors have an approximately normal distribution.

12. **Percentile Rank** - of a particular test score in a given distribution of scores is a number indicating the percentage of scores in the whole distribution which fall at or below the point at which the given score lies. Percentile ranks show relative standings among reported scores. Distribution of percentile (or centile) ranks is approximately rectangular, whereas most raw score distributions from which the percentile ranks are derived are approximately normal.

13. **Random Sample** - a sample selected in such a way as to guarantee equal probability of selection to all possible samples of this size that could be formed from the members of the population involved. It is also true that each element in the population has equal probability of being including in a random sample. If a random sample is sufficiently large and is truly random, a test given to the sample will produce the same score distribution as if the entire population were tested.

14. **Range of Scores** - the smallest interval on the score scale which will include all of the measures in the distribution. It is sometimes defined, more simply but somewhat inaccurately, as the difference between the highest and the lowest scores of the variability of the scores of the distribution. GED standard scores can be 20-80, so they have a 61 point possible range.

15. **Statistically Significant Difference** - a large enough difference between two comparable statistics computed from separate samples to indicate that the probability of a difference as large as the observed difference would not be expected to occur by change more than a specified number of times in one hundred. The statistical significance of a difference depends not only on the magnitude of the difference, but also upon the precision of the two measures used to obtain the difference.

16. **Standard Deviation** - is a measure of variability, dispersion, or spread of a set of scores around their mean value. Mathematically, the standard deviation is the square root of the mean of the squared deviation of the scores from the mean of the distribution of scores. The more closely the scores in a distribution cluster about the mean, the smaller the standard deviation. In a normal distribution, 68.26 percent of all of the scores lie within plus and minus one standard deviation of the mean. The standard deviation of GED standard scores for graduating high school seniors is 10 points.

17. **Standard Score** - is one derived from a raw score so that it can be expressed on a uniform standard scale without seriously altering its relationship to other scores in the distribution. A simple type of standard score is the **z-score**, which expresses each raw score as a positive or negative deviation from the mean of all raw scores on a scale in which the unit is one standard deviation. In another type of standard-score scale, the transformation is arranged to yield a normal distribution of standard scores. The use of standard scores simplifies comparisons and interpretations of scores. The standard scores for each GED Test are normalized scores with a mean of 50 and a standard deviation of 10. The relationship between raw scores (number of correct answers) and standard scores is based on the test results from specified samples of soon-to-graduate high school seniors.

18. **T-score** - a normalized standard score on a scale such that the distribution of T-scores in the population from which they are derived has a mean of 50 and a standard deviation of 10. The original T-scores were devised by McCall and named in honor of Thorndike and Terman. GED standard scores are of this type.

Purpose of the Iowa Norming Study

The primary purpose of the Iowa Norming Study was to determine how well Iowa's graduating seniors performed on the revised 1988 GED Tests. Specifically, the study provided the data necessary to describe and evaluate various score requirements in terms of the percentage of Iowa high school graduates that an Iowa GED candidate must exceed in order to obtain the Iowa High School Equivalency Diploma. With such information, judgments about the stringency of Iowa's GED score requirements can be made in light of the performance of Iowa's graduating seniors. As stated by the Commission on Educational Credit and Credentials, judgments relating to the choice of score requirements should be well-reasoned such that: (1) requirements are neither so high as to represent levels of achievement far above that demonstrated by recent high school graduates or, (2) so low as to threaten the credibility of the GED credential.

A second purpose of the Iowa Norming Study was to evaluate and potentially revise Iowa's minimum score rèquirements for issuance of the Iowa High School Equivalency Diploma, based on judgments that arise from looking at the Iowa graduating senior performance level. Another factor was evaluating the potential impact on GED graduate pass rates (both overall and by racial/ethnic subgroups) in relation to alternative score requirements.

Though other benefits (e.g., comparisons of ITED and GED scores) resulted from the study, the major benefit was the knowledge gained about the performance of Iowa's High School Seniors and Iowa GED Graduates on the GED Tests. With this knowledge, informed and well-reasoned judgments could be made about Iowa's minimum score requirements for the issuance of the Iowa High School Equivalency Diploma.

Iowa GED Graduate Impact Study

A related study to the Iowa GED Norming Study was the Iowa GED Candidate Impact Study. The study had two major outcomes:

1. Determine the impact of the establishment of different levels for minimum score requirements on the pass/fail rate of the Iowa GED Graduates and Candidates as a total population, [i.e. what percent of the GED graduates and candidates would meet a different minimal score requirement(s) other than the current requirement of 35 and 45 for issuance of the Iowa High School Equivalency Diploma.]

2. Determine the impact of the establishment of different levels for minimum score requirements on the pass/fail rate of specific subgroups of minority populations within the total Iowa GED Graduate population.

The data, presented in Table I for the Iowa graduate impact study, was based on a total of 3,455 Iowa GED graduates who completed the GED tests between June 1, 1988 and June 1, 1989. Racial/ethnic information was available for 3,382 of Iowa's GED graduates. Additional analysis of racial/ethnic categories was performed for: (1) adults enrolled in GED classes during program year 1988, (2) Iowa's general population, ages 15 through 65+. The major purpose of this analysis was to compare Iowa's GED graduates to: (1) Iowa's adults enrolled in GED classes, and (2) Iowa's overall majority/minority population. There were 229 (6.6%) minority representation in the Iowa GED graduates, 700 (12.10%) minority population represented in the adults enrolled in GED classes, and 59,160 (2.62%) minority representation in the general population; therefore a larger percentage of minority members participated in GED Testing and GED Classes as compared to the percentage of minorities in the overall population. As evidenced in Table I, the distribution of Iowa's GED graduates, by racial ethnic categories, is reasonably reflective of the adult GED student population and Iowa's general population, ages 15 through 65+. On the basis of the data presented in Table I, it seems reasonable to conclude that the sample of 3,455 Iowa GED Graduates provides an adequate representation of the racial/ethnic groups in Iowa's general population, ages 15 through 65+.

TABLE I

A COMPARISON OF NUMBERS AND PERCENTAGES BY RACIAL/ETHNIC CATEGORIES OF:
(1) IOWA'S GED GRADUATES WHO PARTICIPATED IN THE IMPACT STUDY,
(2) ADULTS ENROLLED IN GED CLASSES DURING PROGRAM YEAR 1988,
(3) IOWA'S GENERAL POPULATION AGES 15 THROUGH 65+

Racial/Ethnic Categories	Iowa GED Graduates		GED Classes[1]		General Population[2]	
	N	%	N	%	N	%
Am Ind/ Al Nat	45	1.3	44	.76	4,207	.19
Asian/Pac. Is.	19	.5	165	2.85	9,422	.42
Black	106	3.1	355	6.14	28,959	1.28
Hispanic	59	1.7	136	2.35	16,572	.73
Caucasian	3,153	91.3	5,083	87.9	2,200,332	97.38
Other/No Info	73	2.1	0	0	0	0
Total	3,455	100.00	5,783	100.00	2,259,492	100.00

1. Source: Fiscal Year 1988 Annual Performance Report
2. Source: 1980 Census

The collective results of the Iowa GED Norming Study and Iowa GED Graduate Impact Study provided the data base necessary to help determine the appropriate level at which score requirements should be established for issuance of the Iowa High School Equivalency Diploma.

BACKGROUND

The foundations for the issuance of state high school equivalency credentials based on GED Test results are: (1) the GED Tests are designed to measure the major and lasting outcomes associated with completing a high school program of study, (2) GED score scales, used in evaluating the educational achievement of a candidate for a high school equivalency credential, are derived from the actual performance on GED Tests of a representative sample of U.S. graduating high school seniors. Relating to point one, the revisions to the GED Tests for 1988 (e.g., the addition of an essay to the Writing Skills Test) were made to enhance the comparability of GED Tests and high school curriculum. Relating to point two, the scores for the 1988 GED Tests are based on new national norms determined by administering the revised GED Test battery to a nationally representative group of 1987 graduating seniors. [See Appendix J for a brief description of the GED Tests.]

Each participating jurisdiction establishes its own minimum score requirements for issuance of a high school equivalency credential. However, the Commission on Educational Credit and Credentials, an independent American Council on Education policy making body that governs the GED Testing Service, specifies that states may not establish score requirements less stringent than a minimum of 40 on each Test or an average of 45 across the five tests. This standard requires GED examinees to exceed the performance of about 25% of 1987 graduating seniors nationally. Iowa's current score requirements (a minimum standard score of 35 on each of the five GED Tests and a minimum average standard score of 45 across the five Tests) is one that 70% of the 1987 national sample of graduating seniors met. Thus, the current standard for passing the GED Tests in Iowa requires GED examinees to perform better than approximately 30% of 1987 seniors across the country. The Iowa minimum score requirements are more demanding (stringent) than the Commission's minimum standard. The current Iowa standard requires examinees to exceed the performance of approximately 30% of national graduating seniors. [See Table II for detailed statistical analysis of percentage of U.S. High School Seniors able to meet state requirements for GED credentials.]

TABLE II

ESTIMATED PERCENTAGE OF 1988 U.S. HIGH SCHOOL SENIORS ABLE TO MEET STATE REQUIREMENTS FOR GED CREDENTIALS

Requirement[1]	Percentage of U.S. High School Sample Meeting Requirement
A. 40 or 45	75%
B. 40 or 50	71%
C. 45 Average	71%
D. 35 and 45	70%
E. 40 Minimum	70%
F. 40 and 45	66%
G. 45 Minimum	51%
H. 40 and 45	51%

[1] Minimum scores of 35 and 45 mean that each test score must be at least 35 and an average of not less than 45 on the battery is required. Minimum scores of 35 or 45 mean either that: (1) each test score must be at least 35, or (2) an average of not less than 45 is required.

Source: 1988 GED Statistical Report. p. 25, produced by the GED Testing Service.

Because norming studies conducted by the GED Testing Service sample graduating seniors nationally rather than by state, it is not possible using only the national sample of seniors to estimate the percentage of Iowa graduating seniors that would meet various score requirements. The Commission on Educational Credit and Credentials encourages states to establish score requirements in keeping with the level of performance of their graduating seniors. Several states have conducted studies addressing their seniors' performance on the GED Tests, when evaluating possible changes to GED score requirements. Oregon, for example, conducted a 1981 state norming study and subsequently decided not to change their requirements. Although Oregon's requirement (a minimum of 40 on each test) differs from Iowa's requirements (minimum of 35 on each test and a minimum average of 45), these standards are equal in stringency--both require GED examinees to exceed the performance of about 30% of graduates nationally. Interestingly, the Oregon study determined that about 12% of 1981 Oregon graduating seniors would not meet the state's minimum requirement for a GED credential.

TIMEFRAMES

The timeframes for implementing the norming study were:

EVENTS	DATES
1. Initial GED Norming Study Telenetwork Orientation Meeting [See Appendix A]	July 25, 1988
2. Choose local school district sample. [See Appendix B]	August 1, 1988
3. Meet with administration and accreditation consultants to discuss local school district participation strategies and share study goals and objectives	August 15, 1988
4. Send participation letters to local superintendents. [See Appendix C]	September 1-10, 1988
5. Receive response back from local school district. [See Appendix D]	September 30, 1988
6. Contact Bob Forsyth (University of Iowa) on school district response.	October 15, 1988
7. Send information letter to local school district contact person. [See Appendix E]	October 15, 1988
8. Send school district information to Wayne Patience at GEDTS.	November 1, 1988
9. Second Norming Study Telenetwork Orientation Meeting. [See Appendix F]	December 15, 1988
10. Send testing materials and instructions from GEDTS to local school districts.	January 15, 1989
11. Send thank you letters to local school districts. [See Appendix G]	January, 1989
12. Local school districts conduct test sessions and send results back to GEDTS.	February 1-29, 1989
13. Third Norming Study Telenetwork Orientation Meeting [See Appendix K]	March 9, 1989

EVENTS	DATES
14. GEDTS scoring, data analysis, sent summary data tape to Bob Forsyth for norming and GED candidate impact study.	April 15, 1989
15. Data analysis and reports to John Hartwig.	June 1, 1989
16. Issuance of Final Report and Public Hearings	September - December, 1989

INTENDED UTILIZATION OF NORMING STUDY RESULTS

The intended uses of the norming study results were:

1. Provide data for evaluation of minimum score requirements for issuance of the Iowa High School Equivalency Diploma,

2. Establish the standards for issuance of the Iowa High School Equivalency Diploma within the following parameters.

   a. The standards will be established based on a 70-75 percent pass rate for the Iowa graduating high school senior norm group.

   b. The standards will be established with a maximum of five (5) standard score points between the minimum and maximum standard scores. (e.g. 40 and 45; 45 and 50; as opposed to 35 and 45; 40 and 50).

3. Provide a basis for comparing the Iowa High School Senior Norming Group and Iowa GED Candidate performance on the GED Test Batteries.

SELECTION OF LOCAL SCHOOL DISTRICTS

The sampling design, that was used for the selection of Iowa public school districts to be involved in the norming study. was a thirty-six (36) cell model which incorporated the following stratification variables: (1) geographic region, (2) local school size, (3) ITED achievement levels. These stratification variables were defined as follows:

1. Geographic Region. Four geographic regions were formed. [See Appendix H]

2. **Size.** The 1987-88 eleventh grade enrollment (Source: Department of Education, BEDS Enrollment File) in each high school was used to form three local school district size categories:
   (a) 0-74
   (b) 75-199
   (c) 200 and above

3. **Achievement Level.** The 1987-88 eleventh grade ITED average composite score was used to define three categories:
   (a) Iowa percentile ranks (in building average norms) 67 and above
   (b) Iowa percentile ranks between 33 and 66
   (c) Iowa percentile ranks less than 33

   Note: If the eleventh grade (ITED) average was not available, other achievement data were used to classify the schools.

Appendix H provides a graphical illustration of the sampling design. Within each of the 36 cells (4 geographic regions by 3 size categories by 3 achievement levels) a randomly selected public school district was contacted and asked to participate in the norming study. If this district declined to participate, a second school was randomly selected. If the second school also declined, no additional schools in that cell were contacted. A total of 30 public high schools agreed to participate in the norming study. Two randomly selected nonpublic high schools also agreed to participate. Thus, a total of 32 public and non-public school districts agreed to administer the GED tests as part of the norming study. One school district chose not to participate after the initial agreement was signed. Therefore, testing occurred in 31 school districts. Of the 29 participating public school districts, seven were considered to have a state representative sample of minority populations. [See Appendix B for final listing of participating school districts.]

Student Selection

The following steps were used in selection of students within the participating school districts:

1. All seniors or a random sample of approximately 40 seniors from each school participated in the standardization study, EXCEPT:

   A) students who did not complete a course of study resulting in the issuance of a standard high school diploma prior to June 15, 1989, or

   B) students who were handicapped to the extent that a special edition (braille, audio cassette, or large print) and/or special administration (e.g., an individual rather than group administration) of the test would be required.

2. For schools with more than 40 eligible seniors, GEDTS sent the CHIEF GED EXAMINER a list of 40 random numbers that was used in selecting the students.

3. A cross check was built into the selection process to insure that the proportion of minority students in the sample was within plus or minus 5% of the minority proportion in the graduating class.

4. In those cases where the senior class had more than one minority population, the representative sample was proportional to each minority group represented in the senior class. [The four standard minority groups were: (1) American Indian/Alaska Native, (2) Asian/Pacific Islander, (3) Black, (4) Hispanic.]

A total of 852 seniors participated in the norming study.* Because the test results for 107 of these seniors were lost in the mail enroute from the GED testing center to the GED Testing Service, test scores were only available for 745 seniors. Of these 745 examinees, 722 completed all five tests. These 722 seniors comprised the Iowa GED norming sample. Racial/ethnic information was available for 719 of the Iowa High School Senior Norm group. Of these 719 students, 5.5% (N= 40) indicated they were a member of a minority group. Table III displays the racial/ethnic composition of the Iowa GED norm group as compared to Iowa's secondary school population for the 1988-89 enrollment period, grades 9-12. As can be observed in Table III, the distribution of seniors by racial/ethnic category is similar to the statewide distribution of Iowa's secondary school population, grades 9-12.

*The number of participating seniors was reduced slightly from the original sample due to the fact that Iowa had a flu epidemic during February, 1989, which was the test administration/data collection phase of the norming study. The flu epidemic resulted in a number of students, who had been randomly selected to participate in the norming study, to be absent on the day(s) the participating school district was scheduled to administer the GED Test Battery to the norm group. The chief examiners arranged make up testing sessions in order to collect complete test data on as many of the norm group as was feasibly possible.

TABLE III

A COMPARISON OF THE NUMBER AND PERCENTAGE BY RACIAL/ETHNIC CATEGORIES OF: 1) IOWA'S HIGH SCHOOL SENIOR NORM GROUP, (2) IOWA'S SECONDARY PUBLIC AND NON-PUBLIC SCHOOLS FOR THE 1988-89 ENROLLMENT PERIOD (GRADES 9-12)

Racial/Ethnic Categories	Iowa GED Norm Group		Grades 9-12[1]	
	Number	Percentage	Number	Percentage
Amer Ind/Al Nat	4	.6	371	.3
Asian/Pac Isl	3	.4	1,640	1.1
Black	18	2.5	2,756	1.9
Hispanic	15	2.1	1,372	.9
Caucasian	679	94.0	140,706	95.8
Other/No Info	3	.4	0	0
Total	722	100.00	146,845	100.00

1. Source: Iowa Basic Education Data Survey (BEDS) for 1988-89 Enrollment Period. Grades 9-12 were used as the basis for comparison to the norm group. Specific racial/ethnic data was not available by graduating seniors. However, the differences in racial/ethnic percentages between the graduating seniors and the secondary enrollment for grades 9-12 was judged to be inconsequential.

The representativeness in terms of academic achievement of these 722 students relative to all Iowa high school seniors, was further examined by comparing the eleventh grade ITED composite score distribution for these students to the ITED composite scores for the 30,360 Iowa eleventh grade students who took the ITED in the fall of 1987. Table IV shows selected summary statistics both for the 593 seniors who had ITED scores and for the Iowa ITED norm group. The data in Table IV indicated that the GED sample had, on the average, slightly higher scores then the Iowa ITED norm group. However, the difference was relatively small (less than .1 standard deviation units). Also, as seen in Table V the average GED score for seniors having ITED scores was slightly greater than the average GED score for seniors not having ITED scores. On the basis of the data in Tables IV and V, it seems very reasonable to conclude that the sample of 722 seniors is representative of the total population of seniors with respect to achievement on the ITED.

TABLE IV

ITED COMPOSITE SCORE SUMMARY STATISTICS FOR
THE GED HIGH SCHOOL SAMPLE AND THE STATE ITED NORM GROUP

Statistic	GED Sample (N = 593)	ITED Norm Group (N = 30,360)
Mean	19.3	18.9
Standard Deviation	6.4	6.7
90th percentile	28.2	28.2
75th percentile	23.6	23.3
50th percentile	19.0	18.5
25th percentile	14.9	14.2
10th percentile	11.0	10.6

TABLE V

GED AVERAGE SCORE SUMMARY STATISTICS FOR
TWO SUBGROUPS OF THE GED HIGH SCHOOL SAMPLE

Statistic	Group 1[a] (N = 593)	Group 2[b] (N = 129)
Mean	51.1	50.5
Standard Deviation	7.6	8.5
90th percentile	61.1	61.0
75th percentile	56.4	57.0
50th percentile	51.3	50.9
25th percentile	45.3	43.7
10th percentile	41.2	38.7

[a]Examinees in Group 1 had ITED scores available.

[b]Examinees in Group 2 did not have ITED scores.

The GED score distributions for the weighted sample were highly similar to those for the unweighted sample. Table VI provides summary statistics for the GED average score for both the weighted and unweighted samples. The differences in these two distributions are extremely minor. Given the similarity of the unweighted and weighted score distribution and the similarity of the achievement levels of the unweighted sample of seniors to the population of seniors (See Tables IV and V), it was decided that all analyses concerning the effects of various criteria on the passing rates of high school seniors would be performed with the observed, unweighted sample.

TABLE VI

GED AVERAGE SCORE SUMMARY STATISTICS FOR
THE UNWEIGHTED AND THE WEIGHTED HIGH SCHOOL SAMPLE

Statistic	Unweighted (N = 722)	Weighted (N = 8169)
Mean	51.0	50.8
Standard Deviation	7.8	7.7
90th percentile	61.1	60.7
75th percentile	56.6	56.2
50th percentile	51.3	51.2
25th percentile	45.1	45.1
10th percentile	40.6	40.6

The distributions of these 722 students by the three stratification variables (region, size, achievement level) are shown by Tables X, XI, XII, XIII in Appendix H. The population percents of pupils in each of the major stratification categories are also given in Appendix H.

As can be seen in the tables in Appendix H, the observed percents in some categories differed markedly from the population percents. **Thus, weighted frequency distributions of test scores were created to better represent the high school senior population with respect to the stratification variables.** The weighted sample percents in each of the major stratification categories are also given in Appendix H.

TEST ADMINISTRATION PROCEDURES

The GED Tests administered to the high school seniors were sent to the chief GED examiners as opposed to the local school districts. The chief examiners coordinated testing schedules and logistical procedures with the designated contact person at the participating school district. This procedure was designed to insure that all testing conditions and procedures, specified by GEDTS for state norming studies, were adhered to following standard testing protocol.

RESULTS

The purpose of this section is to report the results of the norming study. The statistical results are displayed in Tables VII, VIII and IX with graphic displays of Tables VII, VIII, and IX presented in Figures I - VI.

Table VII displays the mean (average) and standard deviation for each of the five GED tests and the overall average for: (1) National High School Seniors, (2) Iowa High School Seniors, (3) National GED Graduates, (4) Iowa GED Graduates.

TABLE VII

A COMPARISON OF AVERAGE STANDARD SCORE PERFORMANCE OF: (1) NATIONAL GRADUATING HIGH SCHOOL SENIORS, (2) IOWA GRADUATING HIGH SCHOOL SENIORS, (3) NATIONAL GED GRADUATES, (4) IOWA GED GRADUATES

TEST	National[1] High School Seniors		Iowa[2] High School Seniors		National[3] GED Graduates		Iowa[4] GED Graduates	
	M	S.D.	M	S.D.	M	S.D.	M	S.D.
W. Skills	50.2	9.9	51.0	8.4	49.4	6.0	48.9	6.7
S. Studies	50.5	10.3	51.3	9.5	52.9	6.4	53.5	6.8
Science	50.1	10.2	51.1	8.6	53.9	6.5	53.9	6.6
Literature	49.9	10.3	49.5	9.2	52.7	7.0	54.1	7.2
Math	50.3	10.1	51.9	9.2	49.0	6.0	49.1	6.3
Average	50.2	8.9	51.0	7.8	51.6	5.2	51.5	5.2

1. N= 1,278 national sample of graduating seniors who took all five GED tests.

2. N= 722 Iowa sample of graduating seniors who took all five GED tests.

3. N= 15,496 national GED graduates who took all five GED tests.

4. N= 3,455 Iowa GED graduates who took all five GED tests.

5. The National GED Graduates were considered passing at a 40 standard score minimum. The Iowa GED Graduates were considered passing at the 35 and 45 standard score requirement which is the current standard for issuance of the Iowa High School Equivalency Diploma. The difference in the two pass rates was judged to be inconsequential.

The comparison of the performance levels of the four groups are as follows:

1. The Iowa Seniors scored highest in Writing Skills and Mathematics with average standard scores of 51.0 and 51.9.

2. The Iowa GED Graduates scored highest in Social Studies and Literature with average standard scores of 53.5 and 54.1.

3. The National GED Graduates and Iowa GED Graduates tied in Science with an average standard score of 53.9.

4. The National GED Graduates scored highest on the overall test average with an average standard score of 51.6. However there was only .1 of a point difference between the National GED Graduates and Iowa GED Graduates who had an overall standard score of 51.5.

5. The Iowa High School Seniors scored lowest in Literature (49.5) as compared to the Iowa GED Graduates who scored highest in Literature (54.1).

Figure I displays a line graph comparison of the average standard scores attained for: (1) National Graduating Seniors, (2) Iowa Graduating Seniors, (3) National GED Graduates, (4) Iowa GED Graduates. The standard score scale, which is based on the performance of the national senior standardization sample, is designed so the average score for seniors on each test is 50 and their standard deviation is 10. The other groups' performance levels were plotted against the national norm group. [See definitions of standard score and T-score for explanation of average mean and standard deviation of GED standardized scores.]

Table VIII displays the estimated percent of five groups able to meet various minimum score requirements. The five groups were: (1) National High School Seniors, (2) Iowa High School Seniors, (3) National GED Candidates, (4) Iowa GED Graduates, (5) Iowa GED Candidates. The data presented for the National High School Seniors and Iowa High School Seniors represents the **norm group data**. The data presented for the National GED Candidates, Iowa GED Graduates and Iowa GED candidates represents the **impact group data** for proposed score requirements: [e.g. the requirement of 35 and 45 depicts a 76 percent pass rate for Iowa High School Seniors (norm group data) as compared to a 88 percent rate for Iowa GED candidates (impact group data).]

Figure I

Average (Mean) Standard Score Performance of: (1) National Graduating Seniors, (2) Iowa Graduating Seniors, (3) National GED Graduates, (4) Iowa GED Graduates

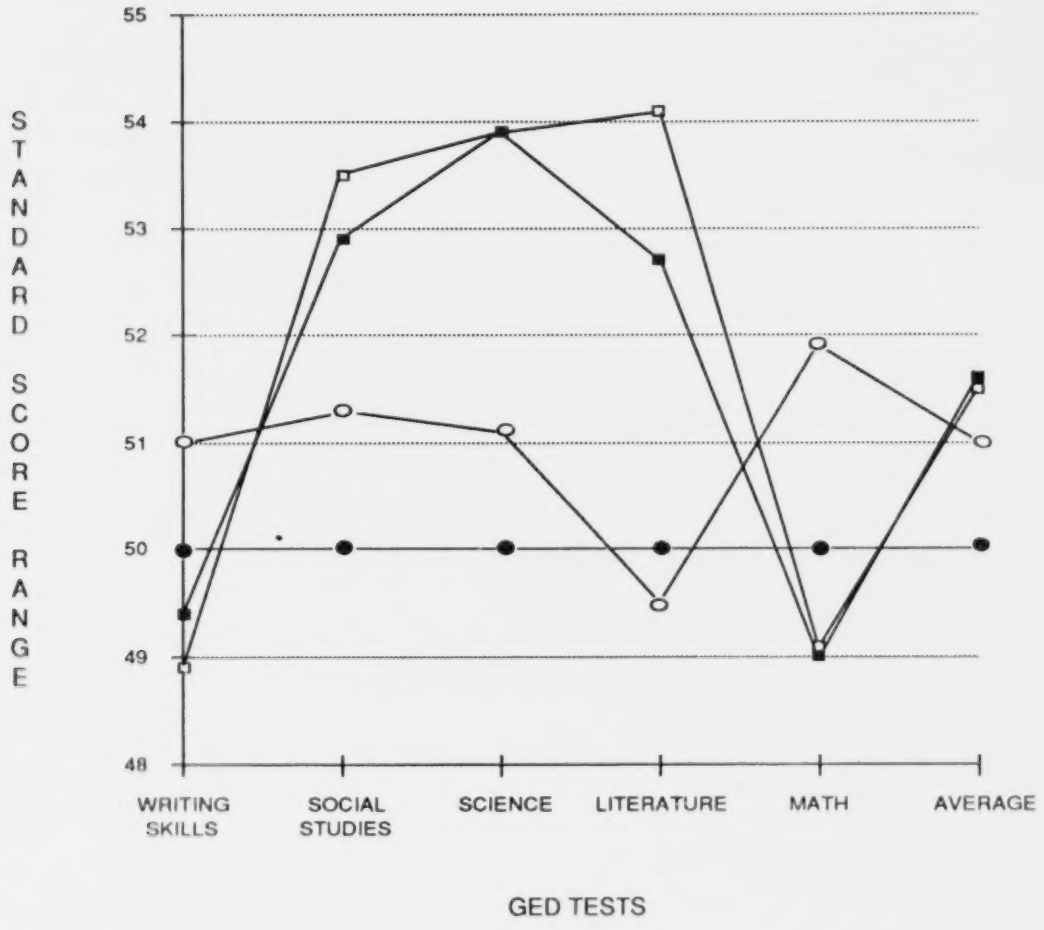


TABLE VIII

ESTIMATED PERCENT OF FIVE GROUPS
ABLE TO MEET VARIOUS MINIMUM STANDARD SCORE REQUIREMENTS:
(1) NATIONAL GRADUATING HIGH SCHOOL SENIORS,
(2) IOWA GRADUATING HIGH SCHOOL SENIORS,
(3) NATIONAL GED CANDIDATES,(4) IOWA GED GRADUATES
(5) IOWA GED CANDIDATES

Requirements	National High School Seniors	Iowa High School Seniors	National[1] GED Candidates	Iowa GED Graduates	Iowa[2] GED Candidates
A. 35 and 45	70	76	67	100	88
B. 40 minimum	70	75	66	91	86
C. 40 and 45	66	72	61	91	80
D. 45 minimum	51	56	41	57	54
E. 40 and 50	51	56	35	55	46

[1]·The national GED candidate population was based on 23,519 examinees who completed all five tests and for whom test results were received by GEDTS between January 1, 1988 through February, 1989. This data is provided, for purposes of Table VIII, as a method of comparing score requirements between the national and Iowa GED candidates. The national GED candidate data should not be considered as necessarily representative of all national GED examinees. [e.g. because this sample includes only examinees who completed all five tests between January 1, 1988 through February, 1989.]

[2]·The Iowa GED candidate pass rate projections were based on the following factors: (1) actual pass rate of 88% at the 35 and 45 requirement. This is based on data presented in the GED Testing Service 1988 Annual Statistical Report, p. 4, (2) projections for the other requirements were based on the pass rate ratio (1.31 ratio) between National GED Candidates and Iowa GED Candidates at the 35 and 45 requirement. (88/67 percent pass rates.)

The following trends were observed:

1. The Iowa GED candidates have a pass rate of 88 percent at the current Iowa requirement of 35 and 45 as compared to a 76 percent pass rate for the Iowa High School Seniors.

2. The Iowa GED candidates have an estimated pass rate of 80 percent at a 40 and 45 minimum score requirement as compared to a 72 percent pass rate for the Iowa High School Seniors.

3. The pass rate for all four groups drops dramatically (a range of 17-20 percentage points) from the 40 and 45 requirement to the 45 minimum requirement.

4. The Iowa GED Graduates have the highest pass rate, at any given score requirement, in comparison to the four other groups.

The data presented in Table VIII clearly delineates the relationship of different pass rates for the norm groups and the impact groups at different score requirement levels. Figures II through V displays bar graphs depicting percent of pass rates for various score requirements. The following comparisons were made:

1. **Figure II** -- National Graduating High School Seniors as compared with National GED Candidates.

2. **Figure III** -- Iowa Graduating High School Seniors as compared with Iowa GED Candidates.

3. **Figure IV** -- National Graduating High School Seniors as compared with Iowa Graduating High School Seniors.

4. **Figure V** -- National GED Candidates as compared with Iowa GED Candidates.

Table IX displays the estimated percentage of minority/majority Iowa GED Graduates able to meet various minimum score requirements. The following trends were observed:

1. Both groups have 100 percent pass rate at the 35 and 45 requirement because this is Iowa's current pass requirement.

2. The majority pass rate at the 40 and 45 requirement is 91% as compared to minority pass rate of 85%. The net result is a 6 percent pass differential impact factor between the two groups.

3. The pass rate for both groups drops dramatically (a range of 32-47 percentage points) from the 40 and 45 requirement to the 45 minimum requirement.

The data presented in Table IX clearly delineates the different pass rate requirement for majority/minority Iowa GED Graduates at different score requirement levels. The data would indicate that the differences in pass rates at the 40 minimum and 40 and 45 minimum requirement levels is inconsequential. Figure VI displays a bar graph depicting a comparison of pass rates at different score requirement levels for majority/minority Iowa GED Graduates.

Figure II

A Comparison of Estimated Percentage of: (1) National Graduating High School Seniors, (2) National GED Candidates Able to Meet Minimum Standard Score Requirements

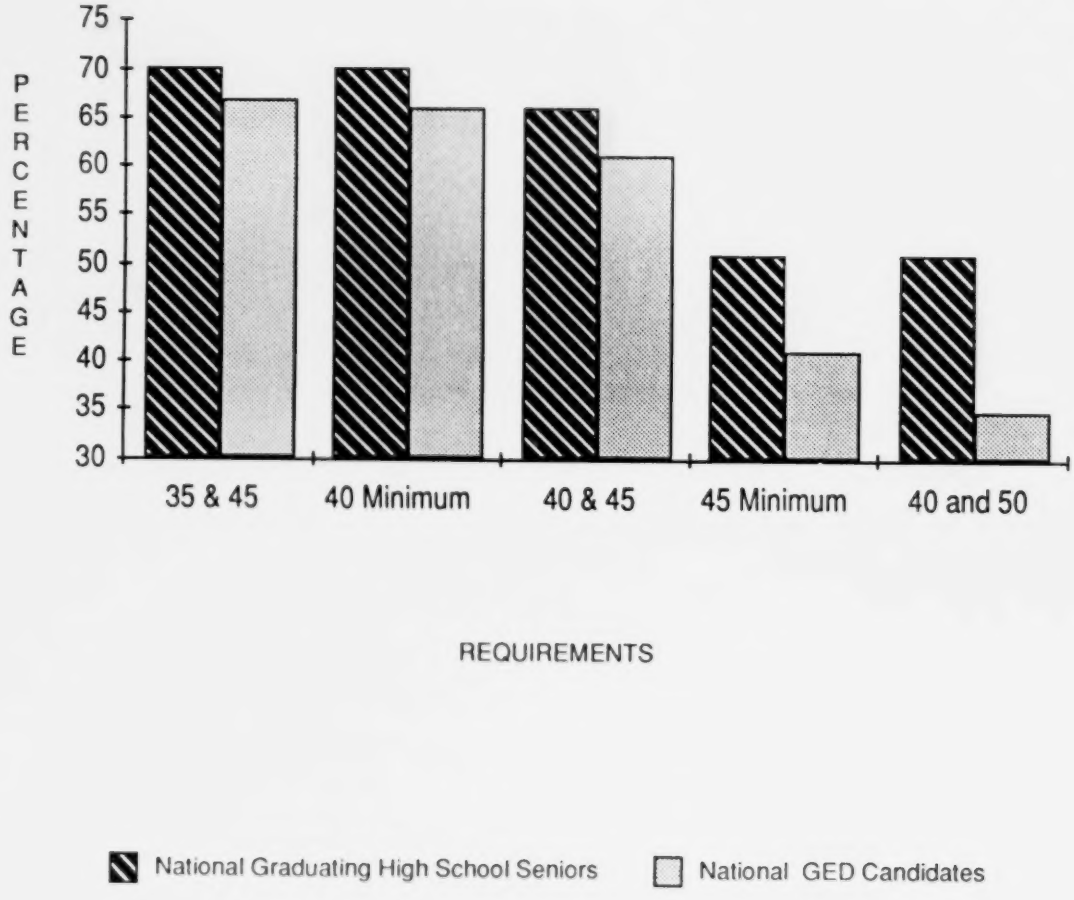


Figure III

A Comparison of Estimated Percentages of: (1) Iowa Graduating High School Seniors, (2) Iowa GED Candidates Able to Meet Minimum Standards Score Requirements

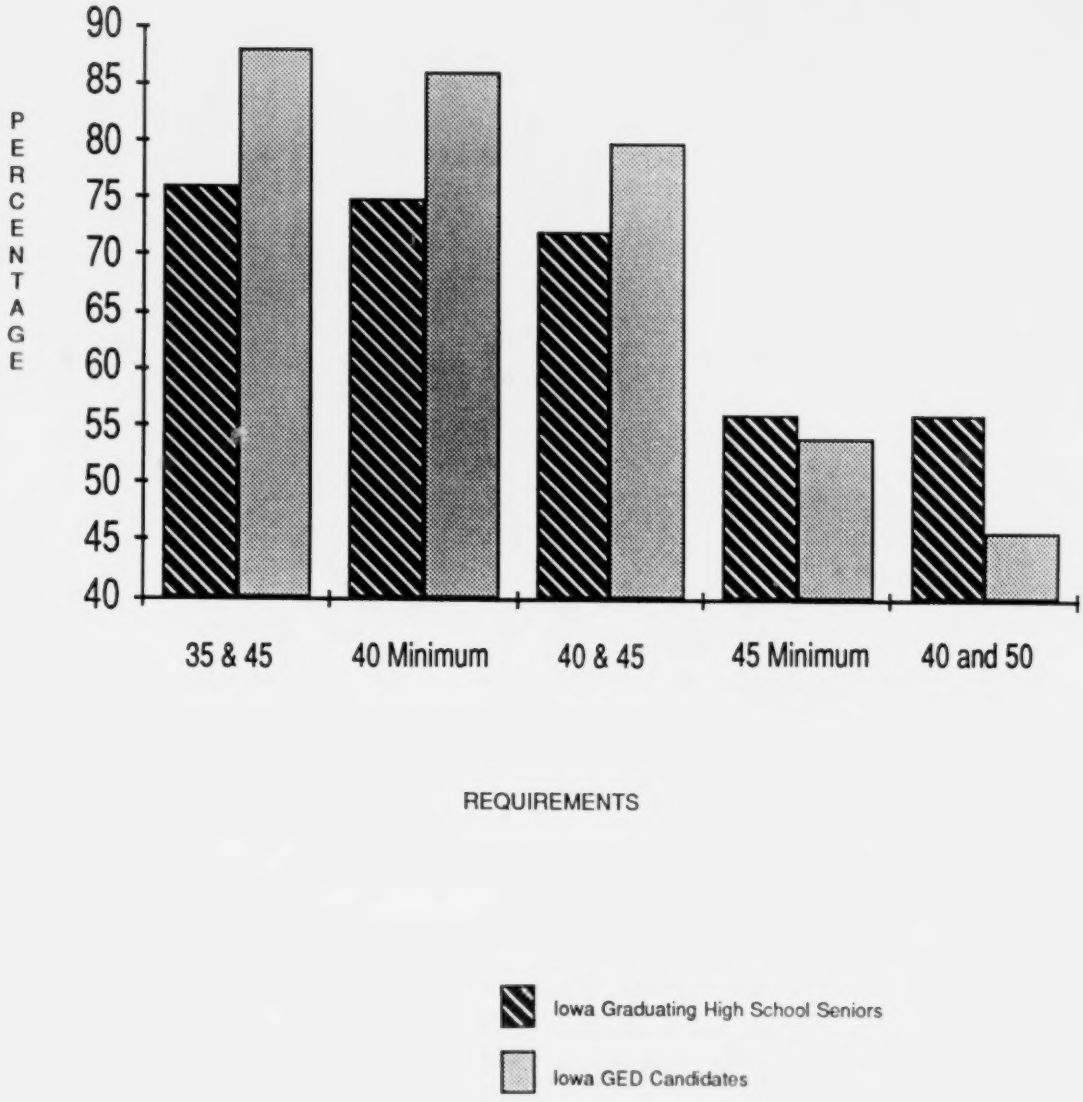


Figure IV

A Comparison of Estimated Percentage of: (1) National Graduating High School Seniors, (2) Iowa Graduating High School Seniors Able to Meet Minimum Standard Score Requirements

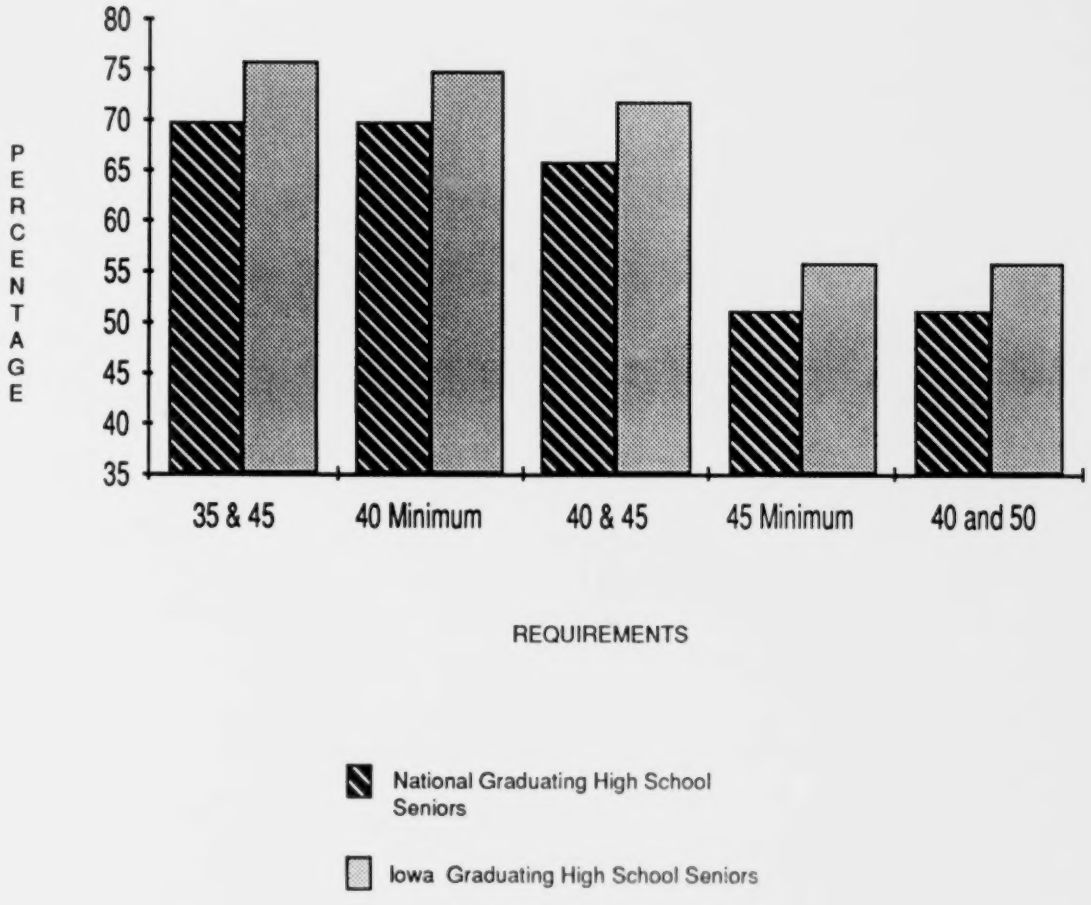


Figure V

A Comparison of Estimated Percentage of: (1) National GED Candidates,
(2) Iowa GED Candidates Able To Meet Minimum Standard Score Requirements

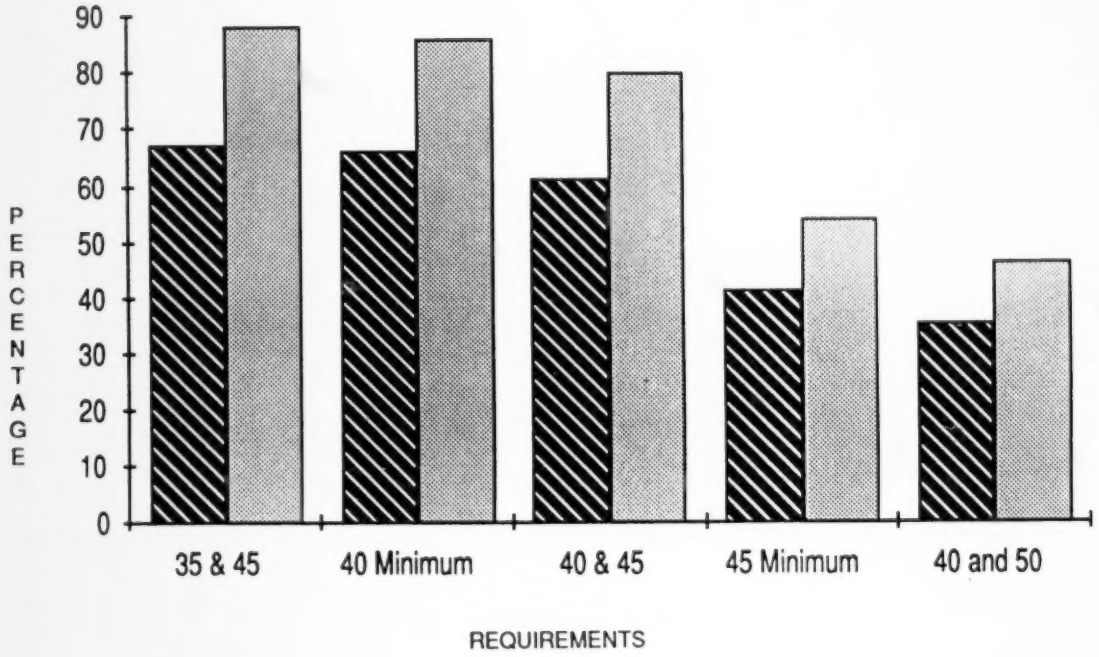


Figure VI

A Comparison of Estimated Percentage of: (1) Majority Iowa GED Graduates,
(2) Minority Iowa GED Graduates Able to Meet Minimum Standard Score Requirements

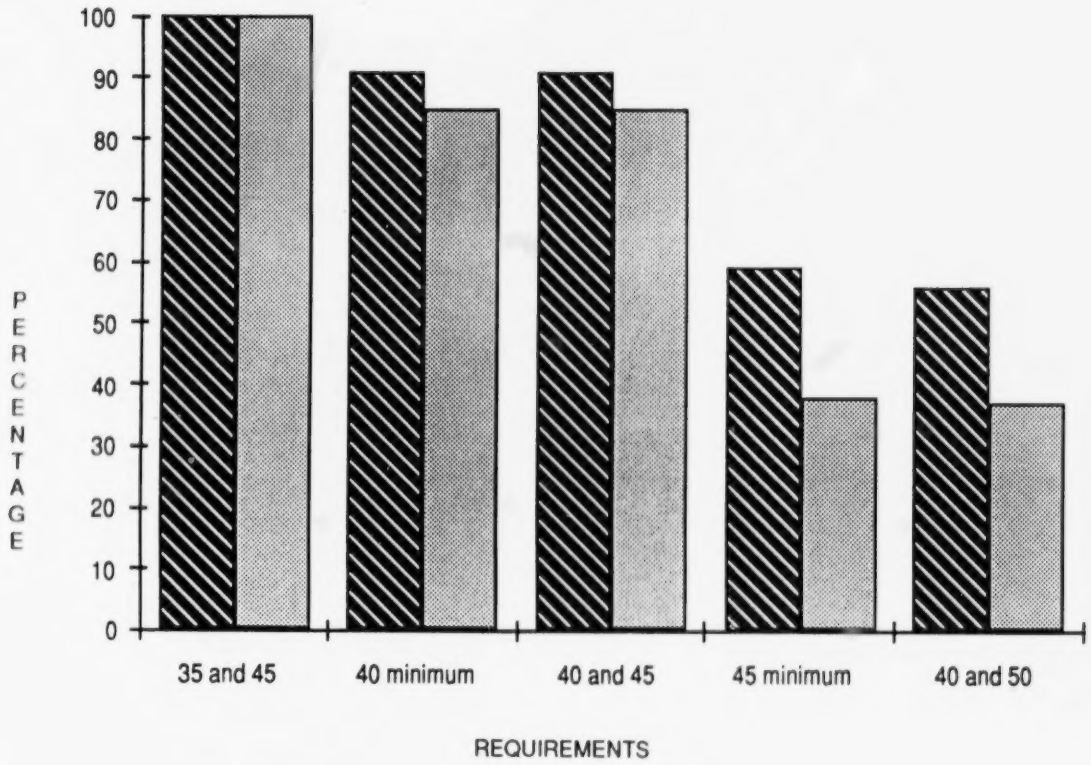


TABLE IX

ESTIMATED PERCENT OF IOWA GED GRADUATES ABLE TO MEET VARIOUS MINIMUM STANDARD SCORE REQUIREMENTS: (1) MAJORITY IOWA GED GRADUATES, (2) MINORITY IOWA GED GRADUATES

Requirements	Majority Iowa[1] GED Graduates	Minority Iowa[2] GED Graduates
A. 35 and 45	100	100
B. 40 minimum	91	85
C. 40 and 45	91	85
D. 45 minimum	59	38
E. 40 and 50	56	37

1. N= 3,153 (91.26%) majority population of the 3,455 Iowa GED Graduates who completed all five GED Tests.

2. N= 229 (6.63%) minority population of the 3,455 Iowa GED Graduates who completed all five GED tests.

3. N= 73 (2.1%) Iowa GED Graduate population on which racial/ethnic information was not available.

4. The Iowa GED Graduate population was utilized to designate minority/majority impact trends for different score requirements. It was not possible to use the Iowa GED candidate population due to insufficient data. The differential impact on minority/majority comparisons were judged to be valid, utilizing the Iowa GED Graduate population information, given the 88 percent pass rate of the Iowa GED Candidate population.

CONCLUSIONS, OBSERVATIONS AND SUMMARY

Conclusions

The following conclusions are based on the data presented in Tables I through IX:

1. The Iowa GED Graduate impact group provides an adequate representation of the Iowa general GED population and the minority distribution in Iowa's GED population.

2. The **Iowa High School Senior norm group** is representative of the Iowa high school senior population with respect to: (1) minority distribution of Iowa's secondary school population, (2) achievement on the Iowa Tests of Educational Development.

3. The projected pass rates for the majority **Iowa GED Graduates** and the **minority Iowa GED Graduates** reflect the same magnitude of change for all requirement levels up to 40 and 45. Any proposed change in the Iowa minimum standard would reflect approximately the same pass rate at different requirement levels for both the majority/minority populations up to 40 and 45.

4. The **National GED Graduates and Iowa GED Graduates** possess educational skills which are at least as strong as those of graduating high school seniors in the areas measured by the: (1) Social Studies Test, (2) Science Test, and (3) Interpreting Literature and the Arts Test. The strong performance of both **National and Iowa GED Graduates** on these three tests suggests that examinees' skills in reading comprehension, analytical reasoning, and general problem solving -- skills which may be more easily acquired through life experience than skills in writing and mathematics -- will serve them well on the GED Tests.

   Although the writing and mathematics skills of the **National and Iowa GED Graduates** are strong enough to pass the test at Iowa's current minimum standard score requirement of 35 and 45, they are lower than the level of skills demonstrated by **National and Iowa Graduating High School Seniors** in these areas.

5. The Iowa standard for issuance of the Iowa High School Equivalency Diploma could be raised from the current standard of 35 and 45 to 40 and 45 without having a significant negative impact on the Iowa GED candidate population.

Observations

The following observations were made as a direct result of the norming study process. The authors, of the norming study report, included the first set of observations as a guide for other researchers or state GED administrators who wish to replicate the Iowa GED Norming Study in other states or jurisdictions.

1. The norming study was written so a step by step replication is possible.

2. An adequate sampling size of the norm group and impact group(s) should be selected for a representative sample of both groups.

3. The GED Chief Examiners should be involved in the study.

4. An adequate sample size of local school districts should be selected to constitute a representative sample.

5. The GED tests should be referenced with a statewide secondary testing program such as the Iowa Tests of Educational Development (ITED).

6. A norming study should be completed, and the results thoroughly evaluated, prior to any consideration given to raising a state's minimum standards for issuance of an equivalency credential.

The following set of observations are intended for the citizens and educators of Iowa. They are based on the norming study results and the writer's personal/professional background with the Iowa GED instructional/testing program.

1. The norming study was a direct result of a long range plan of research studies focusing on the ABE/ESL/GED target populations.

2. The norming study compliments the Literacy/ABE Iowa Target Population studies conducted from 1986-1988. [See Beder and Valentine Iowa Target Population Studies: 1986-1988 available in another publication.]

3. The norming study reinforces the "GED Experience" concept which forms the philosophical foundation for the GED instructional/testing program.

4. The GED Testing Program is a cooperative venture among: (a) GED Testing Service, (b) participating states and jurisdictions, (c) locally defined delivery systems such as community colleges and/or local school districts.

5. The instructional/staff development implications of the norming study results should be thoroughly discussed, evaluated, and a plan of action formulated.

6. The norming study, along with other related research, has provided a comprehensive socio-economic, demographic and scholastic data base describing Iowa's ABE/GED adult population. These studies are a direct result of the state and federal mandates for assessment of performance levels of the target populations. The collective research efforts translate directly into Iowa's answer for accountability and excellence in the statewide ABE/GED instruction/testing program.

7. The norming study can serve as a model for other related research studies. The socio-economic and academically related information was collected on the Iowa High School Senior norm group as part of the data gathering phase of the norming study.

Summary

The primary purpose of the Iowa GED Norming Study was to determine how well Iowa's graduating seniors performed on the revised 1988 GED tests as compared to the Iowa GED Candidate population. A related study was the Iowa GED Candidate Impact Study which had two major outcomes:

1. Determine the impact of the establishment of different levels for minimum score requirements on the pass/fail rate of the GED graduates as a total population.

2. Determine the impact of the establishment of different levels for minimum score requirements on the pass/fail rate of specific subgroups of minority populations within the total GED candidate population.

The results of the norming study clearly indicate that: (1) The Iowa GED Candidates have a high pass rate on the GED Tests. [e.g. 88 percent at the 35 and 45 requirement.] This high pass rate is a direct result of the ABE/GED instructional program offered through Iowa's 15 area community colleges. The referral rate from ABE/GED instructional classes to the testing centers averages between 85-90 percent for any given year, (2) the current minimal standard of 35 and 45 could be raised to 40 and 45 without having a significant negative impact on the GED candidate population, (3) a minimum standard of 40 and 45 would satisfy the 70-72 percent pass rate criteria of the Iowa High School Senior norm group, (4) the Iowa GED Graduates scored below the National High School Senior norm group and Iowa High School Senior norm group in the areas of Writing Skills and Mathematics.

If the decision were made to raise the standard for issuance of the Iowa High School Equivalency Diploma, the pass/fail rate of the GED Candidate population would be closely monitored by the Iowa Department of Education and GED Testing Service to determine the impact of the revised standard. The monitoring process would include differential impact data on the pass/fail rates of the majority/minority Iowa GED Candidate population.

One of the major assumptions underlying the norming study was to evaluate the quality of excellence and purpose in Iowa's GED testing program in relation to the "GED Experience" concept. Now that this goal has been successfully completed, the major issue that emerges is: the standard of excellence that must be attained to receive the Iowa High School Equivalency Diploma. The real challenge for Iowa Adult Educators is to translate the results of the norming study into meaningful, realistic and fair standards which reflects Iowa's educational excellence.

APPENDICES

APPENDIX A

Initial Telenetwork Orientation Meeting Memorandum

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION

NO: 89.009

DATE: July 25, 1988

TO: Chief GED Examiners

FROM: Bureau of Area Schools

SUBJECT: Iowa GED Norming Study Orientation Telenetwork Meeting

INTRODUCTION

The purpose of this memorandum is to announce a telenetwork meeting of all Iowa Chief GED Examiners on Tuesday, August 30, 1988 from 10:00 a.m. - 12:00 Noon. The subject will be an orientation of the chief examiners' role in the Iowa GED Norming Study.

Enclosed with this memorandum are the following: (1) summary of 1988 Iowa GED Tests Norming Study, (2) local school district invitation letter, (3)Iowa School District GED Norming Study Form, (4) listing of potential participating school districts, (5) research design for selection of local school districts.

AGENDA

1. Roll call - John
2. Overview and perspectives - John
3. Historical Perspective on GED/ITED
   - Dr. Douglas R. Whitney, Director, GEDTS
4. Background on Norming Studies and importance of ITED/GED comparisons for GEDTS - Dr. Wayne Patience, Assistant Director, GEDTS
5. Research design for selection of local school districts
   - Dr. Bob Forysth, Director of Iowa Test of Educational Development (ITED) testing program: University of Iowa
6. GED Norming Study Outcomes - John and Bob
7. Chief Examiners' role in norming study - John

SUMMARY

The success of the study depends on good communication and orientation procedures. Please make every effort to attend the telenetwork meeting. ABE coordinators are welcome to attend.

Sincerely,

John Hartwig
Iowa GED State Administrator

JH:po

GRIMES STATE OFFICE BUILDING / DES MOINES, IOWA 50319-0146

1988 Iowa GED Tests Norming Study

PURPOSE

The major purpose of the study is to provide a basis for evaluating and setting Iowa score requirements for the Tests for General Educational Development (the GED Tests).

OUTCOMES

1. Determine the performance level of Iowa high school seniors on the GED test battery to give the Iowa Department of Education information relative to setting minimal standards for issuance of the Iowa High School Equivalency Diploma.

2. Provide data for the direct comparison of the GED test battery to the Iowa Test of Educational Development (ITED) test battery. A total of 1,100 - 1,500 graduating seniors will participate in the study.

METHODS

A stratified sample of 60-70 Iowa school districts representing different socio-demographic, geographic, district enrollment size, and ethnicity variables will be asked to participate in the study. Each participating school will be instructed on methods of selecting graduating seniors and administering the GED Battery. Each selected graduating senior will be asked to take all five GED tests in the battery. A total of 1,100-1,500 graduating seniors will participate in the study.

DATA ANALYSIS

A data tape will be sent from the GED Testing Service for data analysis. The data will be analyzed to report on the two outcomes of the norming study.

TIME FRAMES FOR NORMING STUDY

	EVENT	TIMEFRAME
1.	Choose local school district sample.	August 1, 1988
2.	Meet with administration and accreditation consultants to discuss local school district participation strategies and share study goals and objectives	August 15, 1988
3.	Send participation letters to local superintendents.	September 1-10, 1988
4.	Receive response back from local school district.	September 30, 1988
5.	Contact Bob Forsyth (University of Iowa) on school district response	October 15, 1988
6.	Send information letter to local school district contact person.	October 15, 1988

	EVENT	TIMEFRAME
7.	Send school district information to Wayne Patience at GEDTS.	November 1, 1988
8.	Send testing materials and instructions from GEDTS to local school districts.	January 15, 1989
9.	Local school districts conduct test sessions and send results back to GEDTS.	February 1-29, 1989
10.	GEDTS scoring, data analysis, send summary data to Bob Forsyth.	April 15, 1989
11.	Data analysis and reports to John Hartwig.	June 1, 1989

INTENDED UTILIZATION OF NORMING STUDY RESULTS

1. Provide the necessary statistical tables to ABE/GED instructors and counselors for direct comparison of the General Educational Development (GED)/Iowa Tests of Educational Development (ITED) examinations.

2. Establish the standards for issuance of the Iowa High School Equivalency Diploma within the following parameters.

   a. The standards will be established based on a 70-75 percent pass rate for the Iowa graduating high school senior norm group.

   b. The standards will be established with a maximum of five (5) standard score points between the minimum and maximum standard scores. (e.g. 40 and 45; 45 and 50; as opposed to 35 and 45; 40 and 50).

3. Provide GED Testing Service with the statistical information on the correlations and comparative data between GED/ITED.

4. Provide participating local school districts with local norming information.

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

August , 1988

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, ED.D., DIRECTOR

Dear :

I am writing to encourage you to allow your school to participate in the Iowa Norming Study for the Tests of General Educational Development (GED). These tests are used in Iowa as the basis for awarding the Iowa High School Equivalency Diploma to persons who did not graduate from high school and whose scores on the GED Tests meet score requirements set by the Department of Education. In Iowa, approximately 7,600 examinees take the GED test each year and about 5,200 earn the Iowa High School Equivalency Diploma.

The credibility of the Iowa High School Equivalency Diploma is based on: 1) testing content that closely parallels the typical high school curriculum, and 2) basing Iowa score requirements on the actual performance of Iowa graduating high school seniors. The content of the GED Tests to be administered, as part of the study, includes an essay as part of the Writing Skills test and an increased emphasis on higher level thinking skills in all five content area tests (Writing Skills, Social Studies, Science, Interpreting Literature and the Arts, and Mathematics). Most importantly, your school's participation allows the Department of Education to set realistic score requirements for issuance of the Iowa High School Equivalency Diploma based on the actual performance of Iowa graduating high school seniors. In this sense, the administration of the GED Examinations to Iowa seniors sets the standards by which Iowa GED candidates are evaluated.

Your school has been selected in a carefully stratified random sample designed to yield a representative sample of Iowa schools. Participation, in the Iowa Norming Study, will require either a representative sample (35-40 seniors) of your graduating high school seniors or, if desired, the entire senior class (if senior class is less than 40) to take a form of the complete (5-Test) GED test battery. This will require approximately 7 1/2 hours of test time. However, the scheduling of the test periods may be prorated over 4-5 days.

The actual test administration time frames will be between February 1 - February 29, 1989. Please fill out the attached form and return to: Dr. John Hartwig, Bureau of Area Schools, Department of Education, Grimes State Office Building, Des Moines, Iowa 50319-0146 by September 30, 1988. Additional information will be provided on test administration procedures, time frames, etc. at a later date. If you have any questions, please contact John Hartwig at (515) 281-3636.

Sincerely,

William L. Lepley, Ed.D.
Director, Department of Education

WLL:PO

GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

3563-F67942-8/88

IOWA SCHOOL DISTRICT NORMING STUDY FORM

Directions: Please complete the following information and send to:

John Hartwig
Department of Education
Bureau of Area Schools
Grimes State Office Bldg.
Des Moines, Iowa 50319-0146

BY: September 30, 1988

****

1. Our school district will participate in the norming study. _____ YES

2. School District Name and Address:

_____
_____
_____
_____
_____

3. Name and Address of Contact Person to coordinate the study in your school district:

_____
_____
_____
_____
_____

4. Our school district would like local norming information:

_____ Yes _____ No

5. Approximate number in high school senior class:

_____ Number

6. How many seniors from your school will participate? _____
(A minimum of 35-40, or the number of eligible seniors, whichever is smaller, is requested.)

7. On what date(s) will you administer the tests? _____
(This date(s) may be between February 1 - February 28, 1988.)

****

_____ Date Signed

_____ School Official

49

_____ Title

282-2171

APPENDIX B

Final Listing of Local School Districts
Selected for the 1988 Iowa GED Norming Study

IOWA DEPARTMENT OF EDUCATION
FINAL LISTING FOR
1988 NORMING STUDY

MAS NUM	SCHOOL CODE	SUPT, ADDRESS TELEPHONE
1	01-8134	DON MILLER WAHLERT HIGH SCHOOL WAHLERT HIGH SCHOOL 2005 KANE STREET DUBUQUE IOWA 52001 319 583 9771
1	29-6950	STEPHEN L SWANSON WEST DELAWARE COUNTY WEST DELAWARE HIGH SCHOOL 701 NEW STREET MANCHESTER IOWA 52057 319 927 3515
1	31-1989	RICHARD BACHMAN EDGEWOOD-COLESBURG COMM EDGEWOOD-COLESBURG JR-SR HIGH SCHOOL EDGEWOOD IOWA 52042 319 928 6411
1	33-6961	WAYNE F DREXLER WESTERN DUBUQUE COMM WESTERN DUBUQUE HIGH SCHOOL EPWORTH IOWA 52045 319 744 3885
1	35-1638	FRANCIS D PETERSON DECORAH COMMUNITY SCHOOL THOMAS ROBERTS HIGH SCHOOL CLAIBORNE DRIVE DECORAH IOWA 52101 319 382 4208
2	27-7083	DON WEST WODEN-CRYSTAL LAKE COMM WODEN-CRYSTAL LAKE JR-SR HIGH SCHOOL BOX 167 CRYSTAL LAKE IOWA 50432 515 926 5312

IOWA DEPARTMENT OF EDUCATION
FINAL LISTING FOR
1988 NORMING STUDY

MAS NUM	SCHOOL CODE	SUPT, ADDRESS TELEPHONE
2	32-2781	JAMES R ALEXANDER HAMPTON COMMUNITY SCHOOL HAMPTON COMMUNITY HIGH SCHOOL 101 12TH AVE NW HAMPTON IOWA 50441 515 456 2175
4	26-5949	JERRY PETERSON SHELDON COMMUNITY SCHOOL SHELDON HIGH SCHOOL 1700 FOURTH STREET SHELDON IOWA 51201 712 324 2501
5	21-5283	DENNIS D PIERCE POCAHONTAS COMMUNITY POCAHONTAS HIGH SCHOOL 205 SECOND AVE NW POCAHONTAS IOWA 50574 712 335 4311
6	11-6098	JAMES B AUSTIN SOUTH TAMA COUNTY COMM SOUTH TAMA COUNTY HIGH SCHOOL 1715 HARDING STREET TAMA IOWA 52339 515 484 4811
7	30-6795	DONALD HANSON WATERLOO COMMUNITY EAST HIGH SCHOOL 214 HIGH STREET WATERLOO IOWA 50703 319 291 4800
7	34-0153	GEORGE J. MAURER ALLISON-BRISTOW COMM ALLISON-BRISTOW HIGH SCHOOL 513 BIRCH ALLISON IOWA 50602 319 267 2205

52

IOWA DEPARTMENT OF EDUCATION
FINAL LISTING FOR
1988 NORMING STUDY

MAS NUM	SCHOOL CODE	SUPT, ADDRESS TELEPHONE
7	36-1044	JAMES L ROBINSON CEDAR FALLS COMMUNITY CEDAR FALLS HIGH SCHOOL 10TH AND DIVISION CEDAR FALLS IOWA 50613 319 277 8800
9	10-7038	PHILIP WAINWRIGHT WILTON COMMUNITY SCHOOL WILTON HIGH SCHOOL 1000 CYPRESS ST WILTON IOWA 52778 319 732 2035
9	12-1611	PETER F FLYNN DAVENPORT COMMUNITY CENTRAL HIGH SCHOOL 1120 MAIN ST DAVENPORT IOWA 52803 319 323 9951
10	13-7029	DALE PIERCE WILLIAMSBURG COMMUNITY WILLIAMSBURG JR-SR HIGH SCHOOL 810 W WALNUT WILLIAMSBURG IOWA 52361 319 668 1059
10	17-6768	THOMAS D ENGLER WASHINGTON COMMUNITY WASHINGTON HIGH SCHOOL 313 SOUTH FOURTH AVENUE WASHINGTON IOWA 52353 319 653 6543
10	18-3141	DAVID CRONIN IOWA CITY COMMUNITY IOWA CITY HIGH SCHOOL 1900 MORNINGSIDE DRIVE IOWA CITY IOWA 52240 319 338 3685

IOWA DEPARTMENT OF EDUCATION
FINAL LISTING FOR
1988 NORMING STUDY

MAS NUM	SCHOOL CODE	SUPT, ADDRESS TELEPHONE
11	01-0018	ROGER KEITH MYERS ADAIR-CASEY COMMUNITY ADAIR-CASEY JR-SR HIGH SCHOOL ADAIR IOWA 50002 515 746 2241
11	02-8101	REV THOMAS E GEELAN KUEMPER HIGH SCHOOL KUEMPER HIGH SCHOOL 109 S CLARK CARROLL IOWA 51401 712 792 3596
11	09-6579	JOHN COX URBANDALE COMMUNITY URBANDALE HIGH SCHOOL 7111 AURORA AVE URBANDALE IOWA 50322 515 253 2300
12	22-6039	THOMAS BROWN SIOUX CITY COMMUNITY EAST HIGH SCHOOL 5011 MAYHEW AVE SIOUX CITY IOWA 51106 712 279 6641
12	24-3600	ROY MESSEROLE LE MARS COMMUNITY LE MARS HIGH SCHOOL 921 THIRD AVE SW LE MARS IOWA 51031 712 546 4155
12	25-6039	THOMAS BROWN SIOUX CITY COMMUNITY WEST HIGH SCHOOL 2001 CASSELMAN SIOUX CITY IOWA 51103 712 279 6641

IOWA DEPARTMENT OF EDUCATION
FINAL LISTING FOR
1988 NORMING STUDY

MAS NUM	SCHOOL CODE	SUPT, ADDRESS TELEPHONE
13	02-0387	KENNETH FOSSEN ATLANTIC COMMUNITY ATLANTIC HIGH SCHOOL 1100 LINN STREET ATLANTIC IOWA 50022 712 243 4252
13	04-7092	DAVID F LYNCH WOODBINE COMMUNITY WOODBINE HIGH SCHOOL 5TH AND WEARE WOODBINE IOWA 51579 712 647 2411
13	08-2826	ROY E BAKER HARLAN COMMUNITY SCHOOL HARLAN COMMUNITY HIGH SCHOOL 2102 DURANT HARLAN IOWA 51537 712 755 2152
14	05-1503	PAUL GENE GRUMLEY CRESTON COMMUNITY SCHOOL CRESTON HIGH SCHOOL MAPLE AND IRVING CRESTON IOWA 50801 515 782 7028
15	13-6854	CHARLES L FRIZZELL WAYNE COMMUNITY SCHOOL WAYNE COMMUNITY HIGH SCHOOL BOX 151 CORYDON IOWA 50060 515 872 2184
15	14-1619	DAN A ROE DAVIS COUNTY COMMUNITY DAVIS COUNTY COMMUNITY HIGH SCHOOL 106 NORTH EAST STREET BLOOMFIELD IOWA 52537 515 664 2200

IOWA DEPARTMENT OF EDUCATION
FINAL LISTING FOR
1988 NORMING STUDY

MAS NUM	SCHOOL CODE	SUPT, ADDRESS TELEPHONE
16	12-0882	JAMES E. MITCHELL BURLINGTON COMMUNITY BURLINGTON COMMUNITY HIGH SCHOOL 421 TERRACE DRIVE BURLINGTON IOWA 52601 319 753 6791
16	14-3312	WILLIAM J CAMERON KEOKUK COMMUNITY SCHOOL KEOKUK HIGH SCHOOL 2285 MIDDLE ROAD KEOKUK IOWA 52632 319 524 1402

APPENDIX C

Participation Letter Sent To Local
School District Superintendents

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

August , 1988

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, Ed.D., DIRECTOR

Dear :

I am writing to encourage you to allow your school to participate in the Iowa Norming Study for the Tests of General Educational Development (GED). These tests are used in Iowa as the basis for awarding the Iowa High School Equivalency Diploma to persons who did not graduate from high school and whose scores on the GED Tests meet score requirements set by the Department of Education. In Iowa, approximately 7,600 examinees take the GED test each year and about 5,200 earn the Iowa High School Equivalency Diploma.

The credibility of the Iowa High School Equivalency Diploma is based on: 1) testing content that closely parallels the typical high school curriculum, and 2) basing Iowa score requirements on the actual performance of Iowa graduating high school seniors. The content of the GED Tests to be administered, as part of the study, includes an essay as part of the Writing Skills test and an increased emphasis on higher level thinking skills in all five content area tests (Writing Skills, Social Studies, Science, Interpreting Literature and the Arts, and Mathematics). Most importantly, your school's participation allows the Department of Education to set realistic score requirements for issuance of the Iowa High School Equivalency Diploma based on the actual performance of Iowa graduating high school seniors. In this sense, the administration of the GED Examinations to Iowa seniors sets the standards by which Iowa GED candidates are evaluated.

Your school has been selected in a carefully stratified random sample designed to yield a representative sample of Iowa schools. Participation, in the Iowa Norming Study, will require either a representative sample (35-40 seniors) of your graduating high school seniors or, if desired, the entire senior class (if senior class is less than 40) to take a form of the complete (5-Test) GED test battery. This will require approximately 7 1/2 hours of test time. However, the scheduling of the test periods may be prorated over 4-5 days.

The actual test administration time frames will be between February 1 - February 29, 1989. Please fill out the attached form and return to: Dr. John Hartwig, Bureau of Area Schools, Department of Education, Grimes State Office Building, Des Moines, Iowa 50319-0146 by September 30, 1988. Additional information will be provided on test administration procedures, time frames, etc. at a later date. If you have any questions, please contact John Hartwig at (515) 281-3636.

Sincerely,

William L. Lepley, Ed.D.
Director, Department of Education

WLL:PO

GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

APPENDIX D

Iowa School District Norming Study
Response Form

IOWA SCHOOL DISTRICT NORMING STUDY FORM

Directions: Please complete the following information and send to:

John Hartwig
Department of Education
Bureau of Area Schools
Grimes State Office Bldg.
Des Moines, Iowa 50319-0146

BY: September 30, 1988

****

1. Our school district will participate in the norming study. _____ YES

2. School District Name and Address:

_____
_____
_____
_____
_____

3. Name and Address of Contact Person to coordinate the study in your school district:

_____
_____
_____
_____
_____

4. Our school district would like local norming information:

_____ Yes _____ No

5. Approximate number in high school senior class:

_____ Number

6. How many seniors from your school will participate? _____
(A minimum of 35-40, or the number of eligible seniors, whichever is smaller, is requested.)

7. On what date(s) will you administer the tests? _____
(This date(s) may be between February 1 - February 28, 1988.)

****

_____ Date Signed

_____ School Official

_____ Title

APPENDIX E

Local School District Informational Letter

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, Ed.D., DIRECTOR

October 10, 1988

Dear

The purpose of this letter is to acknowledge the Department of Education's gratitude for your willingness to participate in the 1988-89 Iowa GED norming study. Your school district's participation in the norming study will allow the Department of Education to set realistic score requirements for issuance of the Iowa High School Diploma.

In order to coordinate the activities and procedures involved in the norming study, Kathy Hartl from Northeast Iowa Technical Institute will be in contact with you to establish test procedures, time frames, student selection, etc. If you have questions, please contact the above listed person or myself at (515) 281-3636.

Sincerely,

John Hartwig
Iowa State GED Administrator

JH/bse

GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

APPENDIX F

Second Telenetwork Orientation Meeting Memorandum

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, Ed.D., DIRECTOR

NO: 89.030

DATE: November 21, 1988

TO: Parent Center GED Chief Examiners, Other Interested Persons

FROM: John Hartwig, Bureau of Area Schools

SUBJECT: Telenetwork Meeting to Discuss Specific Strategies for the Iowa GED Norming Study.

INTRODUCTION

The purpose of this memorandum is to announce a special telenetwork meeting scheduled for December 15, 1988, from 9:00 to 11:00 a.m.. The goals of the telenetwork meeting are: (1) a page by page review of the administrator's manual for administration of the GED Tests to the norm group (manual(s) is enclosed), (2) review of strategies and procedures for working with the local school districts, (3) review of GED Candidate Impact Study, (4) input for related research activities.

AGENDA

The agenda is as follows:

1. Roll call - John Hartwig
2. Overview and perspectives - John Hartwig
3. Review of administrator's manual - John Hartwig, Wayne Patience, Bob Forsyth
4. Questions and comments concerning administrator's manual and related procedures - Group
5. Test materials to be sent from GEDTS for norming study administration - Wayne Patience
   A. Time frames for receiving test materials
6. Iowa GED Candidate Impact Study and the relationship to the norming study - Douglas R. Whitney and Wayne Patience
7. Data analysis strategies - Bob Forsyth
8. Related research activities - Marge Skold, Bob Forsyth
9. Additional comments, questions, etc. - Group

GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

PREPARATION FOR TELENETWORK MEETING

The following strategies should be implemented prior to the telenetwork meeting:

1. All alternate examiners, who will be involved in the norming study, should attend the meeting.

2. All chief and alternate examiners, involved in the norming study, should thoroughly review the administrator's manual. (There are enough copies of the administrator's manual for each local school district involved in the study located within each respective merged area school district.)

3. Invite the contact person, from the local school district with whom the chief and/or alternate examiner will be coordinating the norming study, to attend the telenetwork meeting.

4. Study the Random Number Tables. (This would apply only to those chief and alternate examiners testing in schools with more than 40 graduating seniors.)

SUMMARY

The following materials have been included for the telenetwork meeting:

1. Precoded copies of the administrator's manual for each school district involved in the norming study.

2. Precoded tables of Random Numbers for each school district, in those cases where it is necessary to use a random selection process for selection of the norm group.

3. Final listing of local school districts included in the norming study.

If you have any questions prior to the telenetwork meeting, please contact me. ABE Coordinators are invited to attend the meeting. Please bring all materials in this packet to the telenetwork meeting.

Sincerely,

John Hartwig
Iowa State GED Administrator

JH:po

APPENDIX G

Thank You Letter Sent to Local School Districts

STATE OF IOWA
TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, ED.D., DIRECTOR

January 27, 1989

Dear

I wish to take this opportunity to personally thank you for your time and effort in assisting with the Iowa GED norming study. I realize this commitment has taken extra time and effort on your part. However, due to your commitment and the willingness of your school district to participate in the study, the information gained from the study will allow the Department of Education to consider setting realistic score requirements for issuance of the Iowa High School Equivalency Diploma.

When the results of the study are available (hopefully by June-July 1989), the score distributions for your institution will be sent to you. Again, thank you for making the study a success.

Sincerely,

John Hartwig

John Hartwig
Iowa State GED Administrator

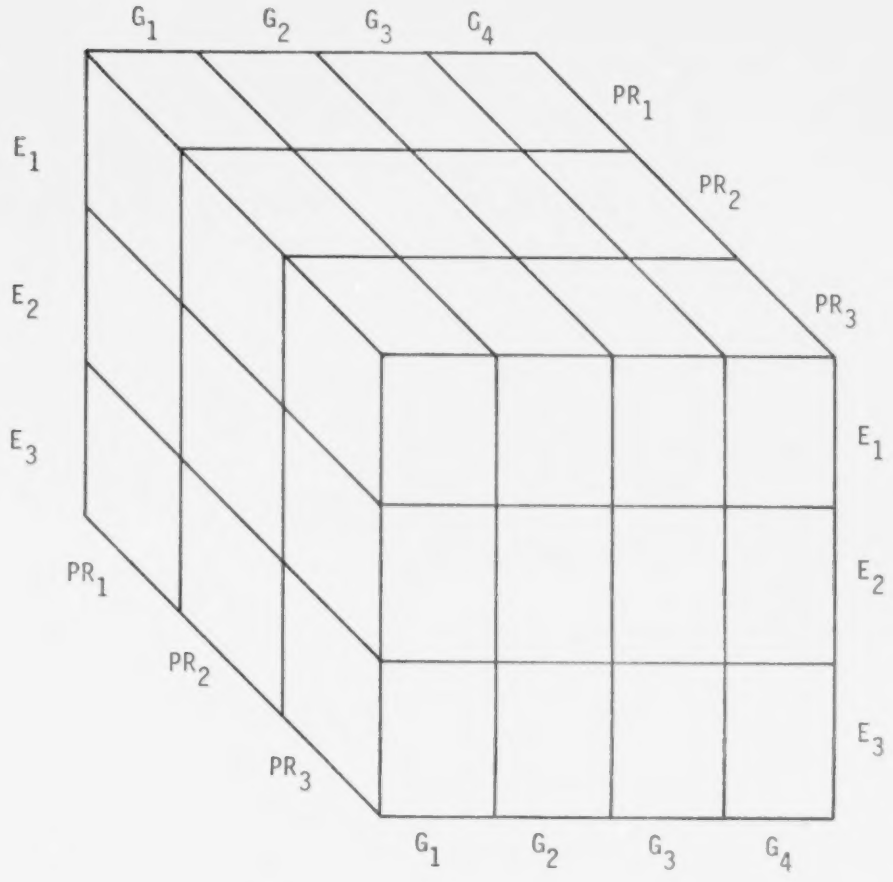
JH/bse

53
GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

APPENDIX H

Graphic Representation of 36 Cell Model
Used for the Selection of Iowa School Districts
for the 1988 Iowa GED Norming Study

A 36 CELL MODEL USED FOR THE SELECTION OF IOWA SCHOOL DISTRICTS FOR THE 1988 IOWA GED NORMING STUDY



G_1 = Northeast Geographic Region
G_2 = Northwest Geographic Region
G_3 = Southwest Geographic Region
G_4 = Southeast Geographic Region
PR_1 = ITED Average Percentile Rank of 67 and above
PR_2 = ITED Average Percentile Rank between 33 and 66
PR_3 = ITED Average Percentile Rank less than 33
E_1 = Eleventh Grade Enrollment Size of 0 - 74
E_2 = Eleventh Grade Enrollment Size of 75 - 199
E_3 = Eleventh Grade Enrollment Size of 200 and above

Attachment #1

SELECTION OF IOWA GED SAMPLE

Step 1: Definition of Stratification Variables

A. Geographic Region. The state was divided into four regions.

Attachment #2 shows the counties within each region.

B. Size. The 1987-88 eleventh grade enrollment (Source: Department of Education, BEDS Enrollment File) in each high school was used to form three size categories:

(1) 0-74
(2) 75-199
(3) 200 and above

C. Achievement Level. The 1987-88 eleventh grade ITED average composite score was used to define three categories:

(1) Iowa PR (averages) 67 and above
(2) Iowa PR between 33 and 66
(3) Iowa PR less than 33

Note: If the eleventh grade average was not available, other achievement data was used to classify the schools.

Step 2: Selection of the Sample

Within each of the 36 cells (4 geographic regions by 3 size categories by 3 achievement levels), three schools were selected at random. [Note: For some categories, only one or two schools were available.] Attachment #3 provides the Iowa District Codes for the schools selected.

Attachment #2

Northeast	Northwest	Southwest	Southeast
Allamakee	Buena Vista	Adair	Appanoose
Black Hawk	Calhoun	Adams	Benton
Bremer	Cherokee	Audubon	Cedar
Buchanan	Clay	Boone	Clinton
Butler	Dickinson	Carroll	Davis
Cerro Gordo	Emmet	Cass	Des Moines
Chickasaw	Hamilton	Clarke	Henry
Clayton	Hancock	Crawford	Iowa
Delaware	Humboldt	Dallas	Jackson
Dubuque	Ida	Decatur	Jasper
Fayette	Kossuth	Fremont	Jefferson
Floyd	Lyon	Greene	Johnson
Franklin	O'Brien	Guthrie	Jones
Grundy	Osceola	Harrison	Keokuk
Hardin	Palo Alto	Madison	Lee
Howard	Plymouth	Mills	Linn
Mitchell	Pocahontas	Monona	Louisa
Winneshiek	Sac	Montgomery	Lucas
Worth	Sioux	Page	Mahaska
	Webster	Polk	Marion
	Winnebago	Pottawattamie	Marshall
	Woodbury	Ringgold Sheldy	Monroe
	Wright	Story Taylor	Muscatine
		Union	Poweshiek
		Warren	Scott
			Tama
			Van Buren
			Wapello
			Washington
			Wayne

TABLE X

PUBLIC SCHOOL SAMPLE: PERCENT OF PUPILS
IN THE IOWA NORMING SAMPLE BY ACHIEVEMENT LEVEL

Level	Population Percent	Sample Percent	
		Unweighted	Weighted
Low	36.2	35.2	38.5
Middle	34.7	48.4	36.2
High	29.1	16.3	25.3

TABLE XI

PERCENT OF PUPILS IN THE IOWA NORMING
SAMPLE BY TYPE OF SCHOOL

School Type	Population Percent	Sample Percent	
		Unweighted	Weighted
Public	93.6	93.2	93.4
Private	6.4	6.8	6.6

TABLE XII

PUBLIC SCHOOL SAMPLE: PERCENT OF PUPILS
IN THE IOWA NORMING SAMPLE BY GEOGRAPHIC REGION

Region	Population Percent	Sample Percent Unweighted	Weighted
Southwest	13.8	17.1	12.4
Southeast	38.0	25.7	36.8
Northwest	28.9	23.5	29.4
Northeast	19.3	33.7	21.5

TABLE XIII

PUBLIC SCHOOL SAMPLE: PERCENT OF PUPILS IN THE
IOWA NORMING SAMPLE BY SIZE*

Size	Population Percent	Sample Percent Unweighted	Weighted
0-74	33.2	35.4	34.9
75-199	26.8	39.7	29.8
200 and above	39.9	25.0	35.4

*Grade 11 enrollment in 1987-99

APPENDIX I

Listing of Merged Area Schools
and Chief GED Examiners

State of Iowa
DEPARTMENT OF EDUCATION
Bureau of Area Schools
Grimes State Office Building
Des Moines, Iowa 50319-0146

01/10/89

OFFICIAL G.E.D. TESTING CENTERS

	LOCATION	CHIEF EXAMINER	TELEPHONE
I	Northeast Iowa Technical Institute Calmar Campus Box 400, Wilder Building Calmar, Iowa 52132	Kathy Hartl	319-562-3263
II	North Iowa Area Community College 500 College Drive Mason City 50401	Linda Schmidt	515-421-4224
III	Iowa Lakes Community College 300 South 18th Street Estherville 51334	Don Johnson	712-362-2604
IV	Northwest Iowa Technical College Highway 18 West Sheldon 51201	Wayne Reed	712-324-5061
V	Iowa Central Community College 330 Avenue M Fort Dodge 50501	Charles Magruder	515-576-7201
VI	Iowa Valley Community College District 3700 S. Center Street Marshalltown 50158	Laura Schinnow	515-752-4645
VII	Hawkeye Institute of Technology Hawkeye Success Center 844 West Fourth Waterloo 50701	Charmaine Carney	319-234-5745
IX	Eastern Iowa Community College District Career Assistance Center 627 West 2nd Street Davenport 52801	Mary Teague	319-326-5319
X	Kirkwood Community College Lincoln Learning Center P.O. Box 2068 Cedar Rapids 52406	Lowell A. Rutz	319-366-0142
XI	Des Moines Area Community College 2006 Ankeny Boulevard Ankeny 50021	Doris Dinsmore	515-964-6384
XII	Western Iowa Tech Community College 1121 Jackson Street Sioux City 51105	Lowell E. Cooper	712-279-6073

	LOCATION	CHIEF EXAMINER	TELEPHONE
XIII	Iowa Western Community College 2700 College Rd., Box 4C Council Bluffs 51502	Elaine Markuson	712-325-3441
XIV	Southwestern Community College 1501 Townline Road Creston 50801	Barbara Stephens	515-782-7081
XV	Indian Hills Community College Ottumwa Center Ottumwa Campus Administration Building Ottumwa 52501	Joan Rourke	515-683-5181
XVI	Southeastern Community College Drawer F Gear Avenue West Burlington 52655	Ruth Ann Sandrock	319-752-2731
	Iowa State Department of Education Vocational Rehabilitation Branch 510 East 12 Des Moines 50319-0146	Sally Kessman	515-281-3041

APPENDIX J

Description of the Tests of
General Educational Development

The Tests of General Educational Development

The GED Program

The General Educational Development (GED) Program began in 1942 with the development of a battery of tests for U.S. military personnel who had not completed their high school studies. The Tests of General Educational Development (GED Tests) provided an opportunity for these people to demonstrate that they had acquired the learning outcomes expected of a high school graduate. Because of this program, many people were able to qualify for jobs and pursue postsecondary education upon leaving the military service.

After the war, it became apparent that civilians could also benefit from this program, a need the American Council on Education (ACE) undertook to fill. Since that time, ACE has directed the GED Testing Program. In the 1950s, several states began to recognize successful GED candidates by issuing credentials based on the examinations. These credentials were considered equivalent--for purposes of occupation, military service, and college admission--to a high school diploma earned at the end of formal study.

From this modest beginning, the GED Testing Program has grown considerably. Today, the tests are used in all 50 states, U.S. territories, and in most Canadian provinces. In 1987, more than 758,367 people took the tests, and about 74 percent qualified for a credential according to standards set by their states, territories, or provinces. Over the years, the GED Tests have provided personal satisfaction as well as occupational and academic opportunities for millions of adults who, for many reasons, were unable to complete their formal high school studies.

The GED Tests' Content

The GED Test battery includes five tests, each measuring the skills considered to be the major outcomes of a high school education. Because GED examinees typically range in age from 16 to 90 and have acquired their skills in a less formal manner than the high school student, the tests focus on the use of major skills and concepts rather than on recall of specific facts. The test questions focus on the general abilities to analyze, evaluate, and draw conclusions. A brief description of the tests follows.

Test One: Writing Skills
(55 multiple-choice items, and essay, 120 minutes)

The GED Writing Skills tests consists of two sections. Part One is a multiple-choice section that measures the ability to edit sentences within the context of one or more paragraphs of extended discourse. Part Two is an essay section that measures the ability to compose a well-written response to a question about a subject or an issue that is familiar to

examinees. The Writing Skills Test score is a combination of the scores on the two parts. Scores for Part One and Part Two are not reported separately. Rather, they are combined and reported as a composite score.

Part One of the Writing Skills Test is a multiple-choice test of the ability to edit and correct problems in sentence structure (35%), usage (35%, and mechanics (30%). These problems are presented in the context of single or multiple-paragraph units. Several items within each set of questions require examinees to maintain consistency in verb tense or point of view within the total text. The item formats require error recognition and sentence correction (50%), sentence revision (35%, and manipulation of sentence elements--referred to as construction shift (15%). Examinees are permitted 75 minutes to complete this section. The multiple-choice section of the Writing Skills Test comprises approximately 60% of the Writing Skills composite score.

Part Two of the Writing Skills Test is an essay question to which examinees must respond in writing. The essay question presents an issue or situations with which examinees are familiar; understanding the question requires no specialized knowledge. Essay questions call upon examinees either to present a point of view on the issue or to present an explanation of a situation. Examinees are given 45 minutes to complete the essay section of the Writing Skills Test and are encouraged to plan, draft, revise, and proofread their essays. The essay section of the Writing Skills Test comprises approximately 35% to 40% of the Writing Skills composite score.

Test Two: Social Studies (64 items, 85 minutes)
and **Test Three: Science** (66 items, 95 minutes)

The GED Social Studies and Science Tests have several important features in common. Though the content areas are obviously different, the two tests are quite similar in terms of the types of skills measured, the contexts used to present the stimulus materials, the types of items used, and the amount and type of graphic material.

SOCIAL STUDIES: Items in the GED Social Studies Test measures the ability to use knowledge and information about fundamental social studies concepts in a variety of ways; mere recall or recitation of facts is not tested. Social Studies Test items are drawn from the following content areas.

Content Areas	Percentage of Test
History	25%
Economics	20%
Political Science	20%
Geography	15%
Behavioral Science (Anthropology, Psychology, Sociology)	20%

The primary emphasis of the Social Studies Test is on the measurement of integrated, comprehensive skills obtained from an overall study of the social studies rather than on discreet concepts from the various subject areas.

SCIENCE: Subject matter for science items is drawn from the life sciences (biology) and physical sciences (earth science, physics, chemistry.) Test items are related to major conceptual themes--the "universal" concepts that cut across all disciplines of science. These themes include change, conservation of mass and energy, interaction, relationships, and time and space.

Content Area	Percentage of Test
Life Sciences: Biology	50%
Physical Sciences: Earth Science, Physics, Chemistry	50%

Items in the Science Test measure integrated concepts and principles of science rather than isolated disciplinary topics. Items do not test only the recall of factual knowledge but rather require examinees to use information provided in the test items or acquired through past education or life experience. Test items illustrate that science education is acquired in both formal and informal settings.

Abstract reasoning and problem-solving ability are very important aspects of the Science Test. This emphasis is included to represent accurately the type of thinking most often required in the field of science. These skills are measured primarily through the use of test items at the cognitive levels of analysis and evaluation.

Items in both the Social Studies and the Science Tests focus on assessing examinees' ability to use concepts and information to solve problems or answer questions. The tests do not include any item that measure only the simple recall of facts or infomration. However, knowledge of fundamental concepts and issues in the content areas is required for use in answering the questions at higher cognitive levels.

Items in both the Social Studies and the Science Tests measures skills at the cognitive levels of comprehension (20%), application (30%), analysis (30%), and evaluation (20%). Between 20% and 40% of the items on both the Social Studies and Science Tests are based on graphic stimulus materials.

Test Four: Interpreting Literature and The Arts
(45 items, 65 minutes)

The content of the Interpreting Literature and the Arts Test consists of materials drawn from three content areas: popular literature, classical literature, and commentary. While most literature selections are by American authors, English and Canadian authors are also represented, as are definitive translations of excerpts from world

literature. Materials in the commentary section prose excerpts about literature and the arts. Appropriate subject matter for excerpts in the commentary section includes published comments, reviews, and criticism of the fine arts, television, film, dance, and literature.

Items in the Interpreting Literature and the Arts Test measure the ability to comprehend, apply, and analyze literary selections, though no items assume a knowledge of the language of literary criticism.

Test items include fiction, prose nonfiction, poetry, and drama selections drawn from the following areas.

Content Area	Percentage of Test
Popular Literature	50%
Classical Literature	25%
Commentary about Literature and the Arts	25%

POPULAR LITERATURE: Popular literature ranges from contemporary literary works to the popular press. The definitive characteristics of popular literature on the GED Tests is that it is of acknowledged quality, i.e., a model of good writing or thought that is likely to endure.

Fiction selections are generally excerpts from novels or short stories found in popular books, and magazines. Prose nonfiction includes excerpts from journals, travelogues, essays, criticism, biography, and major newspapers.

CLASSICAL LITERATURE: Although the line between popular and classical literature is fuzzy, the following definition is used to clarify the distinction: Classical literature is "a piece of literature which by common consent has achieved a recognized position in literary history for its superior qualities; also an author of similar standing." Materials for this section of the test may be drawn from nineteenth- and twentieth-century works of recognized literary merit. Examples of "classical" writers include Twain, Hemingway, Fitzgerald, Faulkner, Emerson, Thoreau, Steinbeck, Thomas Wolfe, Eugene O'Neill, Tennessee Williams, Robert Frost, Carl Sandburg, Katherine Anne Porter, Edith Wharton, Stephen Crane, G. K. Chesterton, and D. H. Lawrence, to name just a few.

The cognitive levels of items in the Interpreting Literature and the Arts Test include literal and inferential comprehension (60%), application(15%) and analysis (25%). The test does not include questions that require prior knowledge of literary works or familiarity with the language of literary analysis or criticism.

All selections included in the Interpreting Literature and the Arts Test are preceded by a purpose question. The function of the purpose question is to highlight the focus of the reading selection and to provide a more realistic context for reading it.

Test Five: Mathematics
(56 items, 90 minutes)

The GED Mathematics Test measures problem-solving skills in the content areas of arithmetic (includes measurement--30%, number relationships--10%, and data analysis--10%) 50% total, algebra--30%, and geometry--20%.

Some mathematical skills and techniques cross the boundaries of the content areas. For instance, the skills involved in organizing information presented in a problem and defining the necessary sequence of steps are useful across content areas; about 30%-40% of test items can be solved by using ratio and proportion techniques.

The focus of the items on the Mathematics Test is on the ability to solve mathematical problems in realistic contexts. In this sense, a knowledge of and ability to apply mathematics processes are crucial to success on the test. Many of the items on the Mathematics Test involve a series of steps to solve a problem, but items generally do not focus on the examinee's ability to perform complicated calculations. The ability to estimate answers is a skill important to success on the Mathematics Test. Some items ask that examinees identify the correct way to set up a problem rather than to work out a full solution to the problem. Also, items differ according to whether or not they provide sufficient information to solve the problem and according to whether or not they provide information extraneous to solving the problem.

About one-third of the items on the Mathematics Test are based upon graphic stimulus materials. Some item sets may be used with either graphic or textual stimulus materials.

Source: 1988 Examiners Manual for the Tests of General Educational Development. pp. 3-4--3-7.

APPENDIX K

Third Telenetwork Orientation
Meeting Memorandum

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, Ed.D., DIRECTOR

NO: 89.051

DATE: February 10, 1989

TO: Parent Center Chief Examiners, ABE Coordinators, GEDTS, Bob Forsyth (GEDTS)

FROM: John Hartwig, Bureau of Area Schools

SUBJECT: GED Norming Study Telenetwork Meeting

INTRODUCTION

There is a special telenetwork meeting of chief examiners scheduled for Thursday, March 9, 1989 from 1:00 p.m. to 3:00 p.m. The purpose of the telenetwork meeting is to "share perceptions" about the test administration (data gathering) phase of the norming study. Many of you have shared with me unique and innovative ways in which you have worked with the school districts and methods employed for student recognition. This telenetwork meeting will provide an opportunity to share with everyone. Each chief examiner should be prepared to give a 5-7 minute summary report of observations, experiences, ancedotal events, etc.

AGENDA

1. Roll Call - John Hartwig
2. Overview and perspectives - John Hartwig
3. Merged Area School Reports - Chief Examiners
4. Future Strategies - Wayne Patience, Bob Forsyth, John Hartwig
5. Progress Report on ITED, ACT, GED Comparability Study - Marge Skold
6. Questions, Concerns, etc. - Group

GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

SUMMARY

If you have any questions prior to the telenetwork meeting, please contact me. ABE Coordinators are invited to attend the meeting.

Sincerely,

John Hartwig
Iowa State GED Administrator

JH:po

APPENDIX L

Local Participating School
District Summary Report of Test Results

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR

DEPARTMENT OF EDUCATION
WILLIAM L. LEPLEY, Ed.D., DIRECTOR

May 25, 1989

Dear :

The Department of Education extends a warm and sincere thank you to you and your staff for participating in the 1988 Iowa GED Norming Study project. We realize the difficulty of administering the GED Test Batteries and acknowledge your efforts which ultimately effected the success of the project.

The GED Tests offer adults, who did not graduate from high school, the opportunity to earn their high school credential. Of the 6,902 Iowa adults taking the GED Tests in 1988, over 91 percent earned scores high enough to qualify for the Iowa High School Equivalency Diploma. Your school's assistance with our project help to ensure that the standards required to issue a high school credential based on the GED Tests will be fair and will accurately reflect the performance of Iowa high school seniors.

The enclosed summary report presents the frequency distribution of standard scores obtained for each of the GED Tests for the students from your school district who participated in the norming project. The average standard scores and standard deviations for your students are presented, grouped by test subject area.

If you have questions about the reports, please call John Hartwig at 515/281-3636 or Bob Forsyth at 319-335-5412.

Sincerely,

John Hartwig
Iowa State GED Administrator
Department of Education

JH/bse

Encl: School Summary Report

cc:

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GRIMES STATE OFFICE BUILDING/DES MOINES, IOWA 50319-0146

GED REPORT FOR DISTRICT

STANDARD SCORE RANGE	WRITING SKILLS FREQ	SOCIAL STUDIES FREQ	SCIENCE FREQ	LITERATURE FREQ	MATHEMATICS FREQ	AVERAGE OF 5 TESTS FREQ
70-80	1	0	0	1	0	0
60-70	2	4	2	2	3	3
50-60	6	3	5	2	4	5
40-50	1	3	3	5	2	2
30-40	0	0	0	0	1	0
20-30	0	0	0	0	0	0
MEAN	57.7	55.6	54.8	54.3	54.4	55.6
STD DEV	8.64	7.62	7.40	8.99	7.91	7.26

	1987 NATIONAL SAMPLE		YOUR SCHOOL	
TEST	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION
WRITING	50.2	9.95	57.7	8.64
SOCIAL STUDIES	50.5	10.39	55.6	7.62
SCIENCE	50.1	10.29	54.8	7.40
LITERATURE	49.9	10.34	54.3	8.99
MATHEMATICS	50.3	10.12	54.4	7.91
AVERAGE	50.2	8.98	55.6	7.26

NOTE. N=1278 NATIONAL SAMPLE OF GRADUATING SENIORS WHO TOOK ALL FIVE GED TESTS

NOTE: N= 10 FOR YOUR SCHOOL